

The CHILDREN'S NEWSPAPER

AND CHILDREN'S PICTORIAL

The Story of the World Today for the Men and Women of Tomorrow

Number 13

June 14, 1919

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Every Friday 1d.

MARCONI MARVELS ON A COUNTRY ROAD

A BOY'S AMAZING JOURNEY

OUT OF THE THAMES BY SUCTION PIPE

Great Excitement at a Well

A SORT OF HUMAN SUBMARINE

Firemen with the nozzles of their hose-pipes blocked, and householders with their taps choked up, wonder however the little eels get there to cause the stoppage. But more wonderful than that is the way little Percy Silk, aged ten, of Bankside, London, shot out of the Thames and bobbed up in a well on dry land. *He was sucked there.*

It is quite a wonderful story. Percy was playing about the riverside when someone gave him a push, and in he went. Though the water was not deep, he appeared to those on shore as in a whirlpool, and immediately vanished. Where he reached the water a pipe enters the river, four feet beneath the surface at low tide.

In the Horror of Waters

The pipe, which is two hundred feet long and three feet in diameter, is the pipe through which water is drawn by pumps to cool the machinery of an electric lighting company on the bank. A man who saw the boy disappear knew of the pipe and its purpose, rushed to the works, and warned the workmen of what had happened. They stopped the pumping machinery at once.

But what of Percy Silk? When he dropped into the river he found himself in an overmastering swirl, received a crack on his head from something hard, and passed into a horror of darkness and raging waters. He did not know where he was or what was happening, but, like Alice, falling down the pit in Wonderland, he had time to think—plenty of time, it seemed to him; for though he was in the pipe only a minute, it appeared to him to be an hour.

Ding, Dong, Dell: Percy in the Well

He thought of his mother and called for her, but there was no mother at hand, and he finished his journey alone. He was swirled through the dark suction pipe into a dark, flooded well; and then, managing somehow to climb out of the water in the well, he called again for mother, and waited.

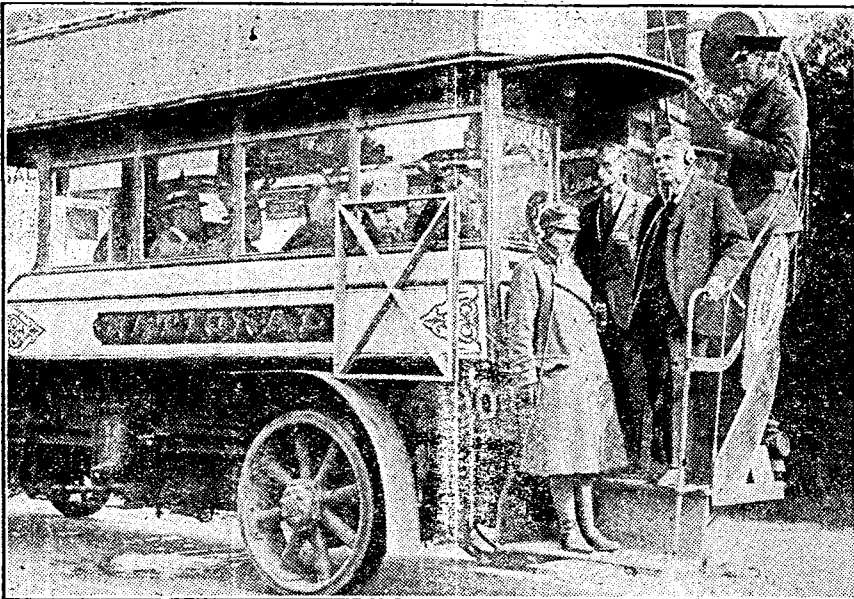
By this time men from the works had hurried to the well and removed the iron grating from the top. They thought that, even if the boy were there, he must be dead; but one of them ventured a cry, "Anybody there?" and back came a lusty shout!

It had taken Percy only a minute to get into the well, but it took twenty minutes to get him out. He was very wet and very frightened, but not a penny the worse, and he has been wondering, they say, why all this fuss has been made about Mr. Hawker's little adventure.

Picking Up Voices From Space



Passengers on a bus-top listening to wireless-telephone voices in a country road in Essex. The messages were sent from a place not previously known, and at another station the exact whereabouts of the senders was located by means of what is called "directional wireless."



The bus that picked up the wireless telephone message from Broomfield, on the road to Colchester, as it was travelling miles away from the senders



Chelmsford school children listening to a gramophone by wireless telephone

Joan of Arc heard mysterious voices that no man could explain; these people are all listening to mysterious voices that science can explain, carried through space without any wires by the new Marconi Wireless Telephone [See page four]

TOAD IN THE HOLE

HOW IT GOT THERE

And How It Grew Too Big to Get Out Again

INSECTS THAT KEEP CAPTIVE TOADS ALIVE

A miner in a Staffordshire colliery, working at a seam of coal 600 feet below the surface and a mile from the shaft, has brought to light a patriarchal toad, which a blow of his pick released from a pocket of clay in the coal face. When taken above ground the toad, thin and feeble, slowly improved in sight and alertness, and is now quite well.

Now, toads are often found in coal mines and quarries, and they emerge from surprising places when old trees are cut down; and the tendency is to suggest that, as they were discovered *in* the coal, *in* the stone, *in* the tree, the toads must have been there when the coal and the stone and the tree began to form, incredible ages ago. That, of course, is nonsense.

Toad Experiments

Dean Buckland tested this question scientifically years ago. He put toads into blocks of limestone, sandstone, and into the wood of a living apple-tree, and sealed each prison securely. At the end of a year all the toads in the air-tight sandstone were dead; those in the apple-tree were dead; those in the porous limestone were alive; and he came to the conclusion that, if denied air and food, toads die within a year; but that with air, as they would get in limestone, they may live for a year. But the second year brought even the limestone lodgers to their end.

Frank Buckland, the dean's son, refused to believe that a toad could live for two years without food, and he had a suspicion that there may have been hidden openings into the limestone, through which tiny insects crept.

That is almost certainly what happens. These toads are not embedded in the actual material; they are in crevices. The only things that had life when the coal and stone began to form are now fossils. There is *always* a hole for the toad's prison, and the toad creeps into it when small, and grows so that it cannot get out.

Too Big to Get Out

Finding their way somehow down the mine, they hide in some hole or crevice at the foot of the seam of coal, and come out from time to time to feed upon such life as they can find in the pit. They grow, and the time comes when they are too big to leave their hole; food then must go to them if they are to live. It may be flies or other insects, just enough to sustain existence.

The idea that these toads have lived from time immemorial actually *in* the coal is a superstition as old as the story of the jewel the toad carries in his head, and it is just as stupid. There are no miracles in Nature, and the fact that the toad can fast for long periods is wonderful enough in itself, without seeking fantastic explanations in myths and fables.

Earth's New Eye for the Heavens

BIGGEST TELESCOPE IN THE WORLD

End of a Ten Years Journey from
a Furnace to a Mountain Top

THE ONLY EYE ON EARTH TO SEE A HUNDRED MILLION STARS

There is something that might travel from the earth to the moon in just over twenty minutes. It has a speed of more than three-quarters of a million miles an hour. It is a little star—called A. G. Berlin 1366, from the German catalogue in which it is recorded—and it seems to be approaching our earth at the pace of about 212 miles a second. This is the greatest speed yet measured among stars, nearly eighteen times greater than the motion of our solar system through space.

The honour of measuring the speed of this star is now added to the noble record of the Mount Wilson Observatory, in California, where the astronomers are bringing into use the biggest telescope in the world. Its story goes back to years before the war, but it is only now reported that the huge instrument is ready to work. It looks as if it has begun.

This Dark Earth

Except to ourselves, and perhaps to other beings living on the planets or on the moons of the little solar system, the earth is a dark place. No eye would ever see it across the black night of space if it were not made faintly light, like our moon, by the sun streaming its light upon it.

But though our faintly lighted little world is only visible from our sun's small part of the infinite sky, the intelligence of mankind has made instruments which will collect the light of other suns millions of millions of miles away. The more powerful the lens that gathers up the light from unthinkable depths of black space the greater the number of flaming suns we discover, many of them far bigger, hotter, and brighter than our sun. And now the biggest of all telescopes is about to be used. It will almost certainly reveal to men's sight for the first time half as many more stars as he has been able to see hitherto.

New Eye Watching the Sky

Though with the naked eye we see in the sky only a few thousand stars, with the telescope over two hundred million flaming suns come into view, as more or less faint glints of light, or stars. The new instrument will show over three hundred million. It will be the only eye the earth has for seeing that extra hundred million stars.

The all-important part of an astronomical telescope is the lens, or mirror, that collects the light shining from any object in the sky. Men may work for years to make a lens. The mirror-lens of the new Mount Wilson instrument is 100 inches in diameter, and the making of it was a triumph of glass manufacture.

To make a lens of that size five tons of glass had to be melted, and it must all be exactly alike, without a bubble or a flaw. But no melting crucible anywhere would hold five tons, and so three crucibles were filled for melting at once, and then all were poured into one mould and mixed so as to get a perfect consistency.

Neither in America nor in England could this work be done sufficiently well, and it was actually done in the

forest of St. Gobain, in the department of the Aisne, about midway between Soissons and St. Quentin. That lovely country was a peaceful place when this great work began, and happily the lens was finished and out of the way when the Great War disturbed the quiet of the Aisne.

The Giant Lens

Safely completed, the giant lens was then safely shipped to California by way of Galveston, on the Gulf of Mexico, and there the next stage was the polishing of the lens. It had to be hollowed by polishing until about one ton of its five tons of glass had been gently scoured away, at first with emery paste and then with rouge. So these patient craftsmen rubbed away a ton of glass from the lens!

After years of shaping and polishing a trifling defect was found in one part of the mirror—a little warp of a section of the surface that would have distorted its reflections and upset all calculations based on them.

After all, the mixing of the molten glass from the three crucibles had not been perfect. With the casting a fatal flaw had developed, hidden in the great mass. What could be done? Was all the patient labour of ten years to be thrown away? These men polished and ground the lens again for nine months, till the flaw was removed.

Still this delicate and fragile instrument of observation, made by the carefully picked skill of the world, and brought safely through the danger of land and sea travel, was at the foot of a rugged mountain 6000 feet high, the great ascent of which could be made only by a rocky, zig-zag road which wound round and round for nine miles to the top.

But the care that had triumphed so far was not to be baffled. The lens was packed in soft wrappings, enclosed in an air-tight chest, and hoisted on a motor wagon. It set out on its uphill journey with flags flying. The motor wagon was watched before, behind, and on every side by a corps of 15 alert men, guarding the truck up the mountain-side.

The Ride up the Mountain

They had to guard against every threatened jolt or jar, against every stone that might lie in the way. They had to watch for every bend of the steep zig-zag ascent. Two of them controlled the driving mechanism and the brakes of the car, another held the steering wheel, another walked behind the wagon with wood blocks to drop behind the wheels whenever the wagon stopped.

Happily, all went well, and in the end the wagon with its precious burden safely reached the mountain top. There it has since been placed in position, and now it is ready to begin its placid survey of the heavens.

The foresight, care, and skill that have carried this good work through to success are a rare example of the persistent search for knowledge which slowly alters the story of mankind. It is always going on, and to these patient seekers after knowledge we owe a debt that we can never pay.

PLANT DISCOVERIES

Curious Response to
Ether Waves

HOW DARWIN'S BOY PLAYED HIS
BASSOON TO FLOWERS

By our Natural Historian

Shakespeare, in one of his moments of happy ecstasy, described life as finding "tongues in trees, books in the running brooks, sermons in stones, and good in everything." How surprised he would have been to learn that some day we should find something akin not to tongues, but to ears, in trees!

Yet that has happened, for men have found in plants organs of perception by which plants pick up and respond to wireless telegraphy.

A little while ago there came, amid the turbulent news of wars not yet extinguished, the story that an American inventor, by driving little nails into trees, had found a way of enabling them to become detectors of wireless waves, so that by fixing a wire to a tree and using the proper instrument, every tree so treated becomes an aerial for conveying wireless messages to the ear.

Indian's Discovery

We had just realised that interesting fact when, out of the strife and unrest in India, there came a cable of thirty words from Calcutta announcing the wonderful discovery of Sir Jagadis Bose, president of a college in that city, that plants perceive and respond to the long ether waves in wireless signalling. They are affected, that is to say, by the waves that carry wireless messages, and they respond by peculiar vibrations.

Professor Bose had already told us of the telegraph, or semaphore, plant, a natural marvel. Its leaves are, in three parts. The centre leaflet remains rigid, but the two outer ones are in a state of constant movement, rising and falling. The professor finds that the pulsating leaflets respond to stimulants and poisons exactly like the hearts of animals. But he was not the first adventurer in this field of discovery, for Darwin made his son Frank play the bassoon to his plants, and noted how they responded to the vibrations.

Flowers and their Colours

We are advancing slowly into a world of unimagined marvels. Plants are now said to think. They move, they sleep and wake, they droop under the influence of drugs. Sir Jagadis Bose has made them drunk with alcohol, weary and exhausted by excessive stimulation. Thinking of these wonders, we recall what Professor A. W. Bickerton has been telling the Royal Botanical Society. It was before Professor Bose's new discovery, but Mr. Bickerton was working on this subject of vibrations. Sympathetic vibration, he showed, is of unsurpassed importance in Nature's workshop, but to be effective the vibrations must be in tune.

Think of the mystery of the development and retention of the flavours of fruit and the colour of flowers. Professor Bickerton believes that they are stored up by means of sympathetic vibration! What, one wonders, would have happened had Sir Francis Darwin produced the properly attuned vibration when he played the bassoon to the plants on his father's table? E. A. B.

AN OLD STORY

An English traveller has recently visited a little known part of Arabia called "the empty quarter." It is a sand waste; and a local legend says it was overwhelmed by hot sandstorms because a king long ago lived there in luxury with two thousand wives and a guard of two thousand warriors, and God sent destruction upon him as a sign of His displeasure.

DAISY ASHFORD'S BOOK

HOW SHE WROTE IT
BEFORE SHE COULD SPELL

Sir Walter Scott's Little Friend

VICTOR HUGO AS A BOY

Many serious people have been turning with delight and laughter to a book written by a little girl of nine. Sir James Barrie, the author of "Peter Pan," has introduced it to mankind, and grave and stately papers have filled columns with reviews and quotations from it. The author is more than nine now, but her novel is printed exactly as she wrote it, full of delicious mis-spellings, wrong punctuation, and funny ideas; a story set down in writing of the kind that children make up and tell each other when they go to bed at night. The author is Daisy Ashford, and the book is "The Young Visitors," spelt with an "e."

It is impossible to do justice to the "Young Visitors" by quotations, but it is fair to say that nothing like it has appeared in print since Dr. John Brown published the diaries of Marjorie Fleming, the child who read history when she was six and wrote poems and essays at about the same time, but, best of all, faithfully kept a diary.

What Nature Can't Endure

She discussed in it religion, philosophy, and all kinds of learned topics, but opened her baby heart in secret to write in her diary this: "I am now going to tell you the horrible and wretched plaeg that my multiplication table givis me; you can't conceive it. The most dreadful thing is 8 times 8 and 7 times 7; it is what nature itself can't endure." Pet Marjorie was dead and in her grave before she was as old as Daisy Ashford was when she wrote the novel; but from Sir Walter Scott's day down to our own men and women have laughed and wept over her writings and sayings.

Perhaps there are many Daisy Ashfords and Pet Marjories of whom we do not hear; but how many have column reviews in the papers or pages in the Dictionary of National Biography?

Daisy's Heroine

Victor Hugo was a still greater prodigy. He wrote poetry before he was ten, and between 13 and 16 he composed all possible kinds of poems, odes, satires, epistles, tragedies, elegies, translations from the classics, stories, fables, acrostics, charades, enigmas, and so forth. But the Daisy Ashfords and Marjorie Flemings are different. He is a dazzling, incredible phenomenon; they are human, winsome, and mirthful without knowing it.

Daisy's heroine, when she marries her rich and joyous lover, who sighs so sweetly and yawns so gracefully, receives from him "a very huge tara made of rubies and diamonds, also two rich bracelets," and "Ethel gave him a bran new trunk of shiny green leather. The Earl of Clincham sent a charming gift of some hemstitched sheets edged with real lace and a photo of himself in a striking attitude." But the gift which was the best of all was from the bride's father, "a darling little baby calf when ready."

BLACK AND WHITE KENT

How much of Kent is white with chalk and how much black with coal? The men with faith in Kent coal have been abundantly justified, though they have little financial reward as yet for the £3,500,000 they have spent in sinking and working the Kentish mines. It is known, however, that the coal-field underlies 250 square miles, and it is estimated to contain 1,370,880,000 tons.

Kent is also believed to contain 120,000,000 tons of iron ore, of a quality that would pay for working.

THE KINEMA

Pictures as Educators

MAKING KNOWN CITY AND CONTINENT

By Our Kinematograph Correspondent

More and more the educational value of the kinema is being used by public authorities.

A special series of morning film performances for London school children is to be given by the Australian authorities in the big picture theatre in the basement of Australia House. Australia wants English boys and girls to realise the beauties and resources of the great Commonwealth, and the kinematograph has been fixed upon as the best means of conveying this lesson.

Nearly 40 Sheffield manufacturing firms will have their wares illustrated in a new film which is being prepared by the Sheffield City Development Department in order to advertise Sheffield industries. The film will be 12,000 feet long, and will be exhibited everywhere.

The kinema is largely used in America in training air pilots, who take some of their first lessons in aerial navigation by means of films. Seated in a dummy machine, the learner follows the movements demonstrated on the screen.

Daylight film displays, given by a travelling kinema, are to be organised during the summer by the Agricultural Organisation Society, with the object of educating farmers in up-to-date agricultural and commercial methods.

THE KINEMOTOR

The kinemotor is an ingenious travelling open-air picture show which was designed during the war by Captain James W. Barber for propaganda purposes. Kinemotors are now being used to entertain the British armies of occupation. Ten of them were dispatched recently to the Rhine district.

CHIEF FILM COUNTRIES

A French film trade paper publishes statistics showing the number of inhabitants for every kinema theatre possessed by the following countries:

The United States has one for every 4000 inhabitants; Belgium has one for every 7000; England one for every 8000; Italy one for every 10,000; and France one for every 30,000.

Films Coming On

The Editor urges his readers not to patronise picture palaces where vulgar plays are exhibited

CHEATING GRANDMAMMA

"There is nothing like good, old-fashioned castor oil," says Grandmamma, when Dolly and her brother (who have been eating melons on the sly) come home with pains in their little insides. Pains are bad, but castor oil is worse, think the children, so when nobody is looking they exchange the castor oil for honey. Grandmamma is surprised at the pleased way the two young imps take their medicine, but she is still more surprised next morning by the horrible taste of the "honey" she has for breakfast. She believes she has been poisoned and sends for the doctor, who prescribes a dose of castor oil all round. So Dolly and her brother do not escape the nasty stuff, after all. "A Midnight Adventure" is the name of the film in which this story is told.

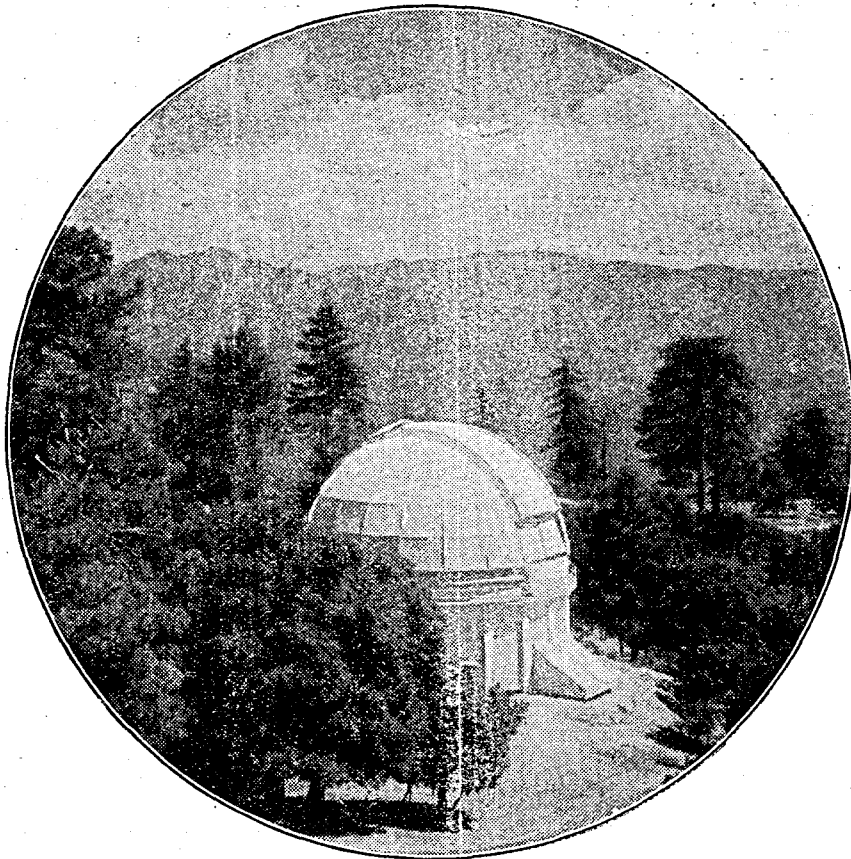
A VILLAGE OF PATRIOTS

President Wilson's war appeal to the women of America sets Ann Craddock afire with enthusiasm, and she immediately rushes out to buy clever chickens as a way of "doing her bit" towards feeding a starving world. The whole village is full of patriotic energy; and when a young man is found apparently doing nothing it is only Ann's intervention which saves him from being tarred and feathered. That her sympathy was well placed is proved when the "slacker" turns out to be a wounded hero back from France. Although "Little Miss Hoover," as this story is named, was produced for war-time, it is well worth seeing even if the war is over.

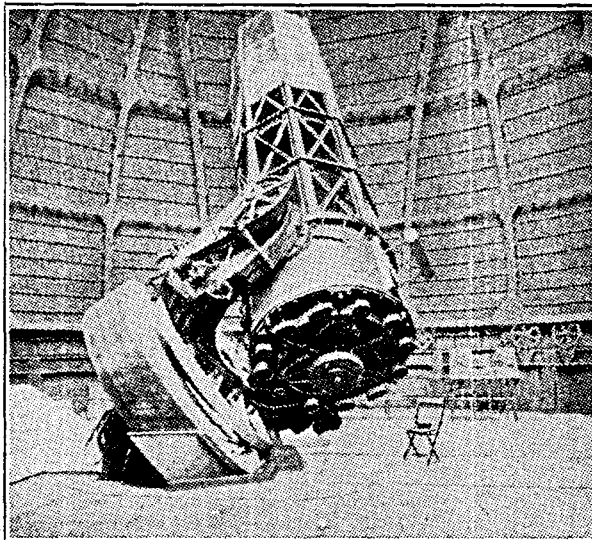
L. Y.

BIGGEST TELESCOPE GETS TO WORK PLAYING CRICKET

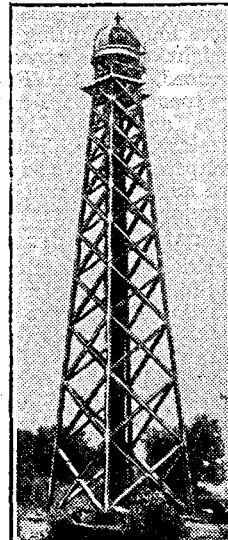
Peering into the Sun After a Ten Years' Journey to a Peak in California



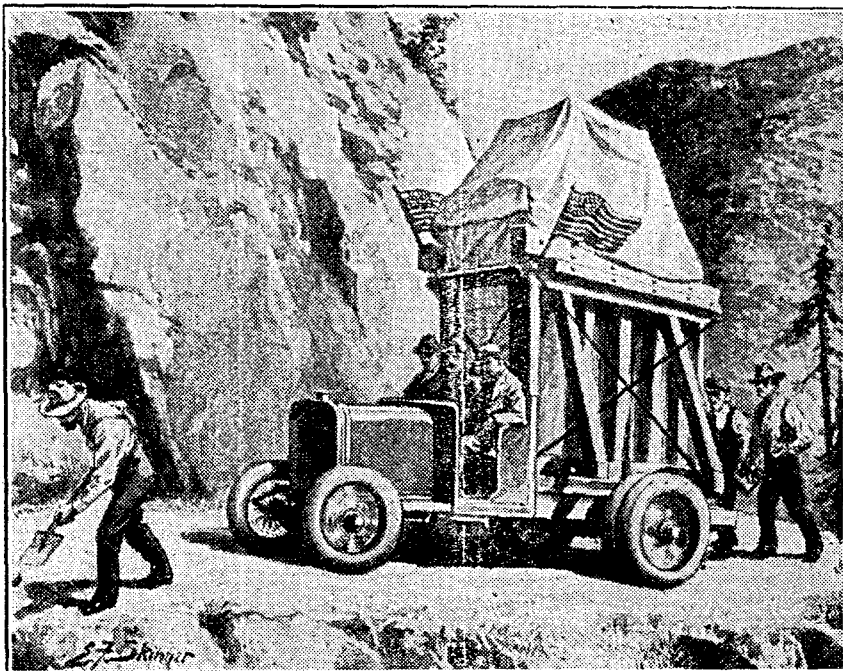
One of the great steel domes at Mount Wilson Observatory. It opens by electric motor



The old sixty-inch telescope under the dome shown above. Through this mirror, weighing about a ton, has been made the most complete study of the sun on record



High tower at Mount Wilson, with reflecting mirrors 160 feet up



How they took the huge lens up the mountain. See story on page two

BY C. B. FRY

Good Fielding

It takes time to become a successful batsman or bowler; not only height and strength but experience and long practice are necessary. Magnificent fielding, however, is within the power of an eleven of quite young boys. It is worth going a long way to see a team of boys field well.

All boys can learn to catch well, to pick up the ball cleanly, and to throw-in quickly and accurately. But sometimes boys' cricket teams do not think fielding matters, and their lack of interest breeds lack of attention, and inattention makes slovenly fielding.

The great secret of good fielding is complete and lively attention on the part of every member of the team. You often see how a team which has been fielding moderately half the day suddenly becomes excellent, merely because a turn in the game suggests to them that they can win if they "put all in" for half an hour.

Great Recipe for Fielding

Half the catches that are missed are missed because particular fielders did not expect "that particular ball" to be hit to them. The great recipe for good fielding is for each man to expect every ball to be hit to him. If a fielder has his eyes keenly on the batsman he can anticipate the direction of the stroke; he can get his hands easily to catches, and also to balls hit along the ground, which otherwise he would not touch.

The habit of watching the batsman every time—not off and on—and of being always on the tip-toe of expectation, is the most important quality a fielder can acquire. Most of the very quick fielders are quick not because they have a special power of quick movement, but because they start sooner than others, and so have more time to perform the necessary action: they start sooner because they are on the *qui vive* all the time; they seem, indeed, to anticipate the batsman's stroke.

Worry the Batsman!

Keen fielding is an enormous help to bowlers; it makes bowlers more difficult for the opposing batsmen. This is not all merely because runs are saved which slack fielding would fail to stop, or because catches are caught which would be missed: it is because the feeling of concentrated hostility on the part of the whole eleven in the field has a direct influence on the batsman's mind.

Such a feeling makes him realise that he is up against a united effort to undo him—it tends to dishearten him, it keeps him disturbed, he cannot settle down into comfortable equanimity. Keen hostile fielding engenders an atmosphere of high pressure against the batting side.

Practice in catching and ground fielding is good, of course; but keen fielding in games is what makes good fielders.

Catching the Ball

The art of catching well, with two hands or one, consists chiefly in a knack of letting the ball itself close the hands round it as it enters the trap. Snatching at the ball, or grasping it, is the wrong idea. The ball should seem to have run into a slab of yielding clay. The hands should make a receptive nest for it; they should feel loose, yet very prehensile, in the act of taking the ball.

One point worth noting is that in catching a rather high ball, or indeed any abruptly falling ball, the hands should be kept down about on a level with the lower ribs. If you push your hands up to a level with your chin, or higher, you make such catches much more difficult. In the case of a slowly dropping ball there is a great temptation to push the hands up to meet it, but this is a fatal mistake.

But, when all is said and done, the great secret of good fielding is an active and keen and persistent attentiveness.

C. B. F.

Remarkable Events in Space MARCH OF THE FLYING & WIRELESS WORLD

First Flight from America to Europe
First Wireless Telephone to a Bus

SAFETY FLIGHT ROUND FRANCE—ACROBAT IN THE CLOUDS

There are triumphs and disasters on all roads of progress, and this week we have both. The triumphs are the great wireless telephone success in England, and the Americans flying to Europe, via the Azores; the disaster is the distressing collapse of the Tarrant triplane, the greatest British plane yet built.

From Marconi House in the Strand, London, it is already possible to speak by wireless telephone for 150 miles; and with Marconi apparatus partly audible speech has been received from America.

In order to show the progress being made a party of journalists has been taken to the wireless works at Chelmsford, Essex, to witness a remarkable experiment. A motor lorry, fitted with a portable wireless telephone, set out for a spot secretly selected by the Mayor of Colchester, and there the operators began, with a range of sixty miles.

CHANNEL PILOT HEARD IN A BUS

The messages were at once picked up by two direction-finding stations at Braintree and Malden. Here the distances from which the messages were received were measured, and the calculations were sent to another portable instrument on a motor omnibus near Chelmsford. The instrument consisted of a coil of wire round a small wooden frame by the side of the bus.

When the messages came through the coil, the two measurements were traced on a map, and it was found that the speaking motor lorry was a few miles west of Colchester.

On the motor omnibus as it went along the Chelmsford and Colchester road, the passengers were able to listen to Mr. Godfrey Isaacs, managing director of the Marconi Company, speaking in his room in the Strand.

Conversations could be heard from many points in Essex, and while the motor was travelling there was caught the talk of a pilot in an aeroplane, apparently flying somewhere on the farther side of the English Channel.

THE AMERICAN ACHIEVEMENT

The first full flight across the American ocean proved to be a crawl. The Mauretania could have done the voyage in half the time taken by the N.C. 4.

Moreover, the ocean was not crossed direct. N.C. 4 covered 1381 miles between Trepassey Bay and Newfoundland in 15 hours 13 minutes, and after being held up for three days, flew another 190 miles in the Azores to Ponta Delgada in 102 minutes; remained a week at Ponta Delgada, and then flew 904 miles to Lisbon in 9 hours 46 minutes, and on for England. The time from Newfoundland to Portugal was about 11 days, but the whole distance might have been flown in about a day had engines worked perfectly.

Yet the Americans have managed to accomplish the most important voyage across the ocean since the days of Columbus.

A LADDER IN THE SKY

Lieutenant Locklear, whose feat of jumping from one aeroplane in motion to another was rather regarded as an American fable, has overcome all his critics. During the Aeronautical Convention at Atlantic City thousands of persons crowded to see the young naval aviator display his audacity.

At a height of 2500 feet, he waited on a machine until another aeroplane was travelling directly above, with a rope ladder dangling down. Lieutenant Locklear grasped the violently swinging ropes, climbed to the higher machine, and descended with a fresh pilot.

Time will prove whether these strange performances are something more than air showmanship. Looping the loop was at first regarded as a curious but useless trick, but during the fighting in

France it became part of the art of manoeuvring. Few persons will ever want to pass from 'plane to 'plane in rapid motion, but the new development, with its exquisite timing of co-operation between machines, may lead to useful results.

GIGANTIC MACHINES

The destruction of the Tarrant triplane, the largest aeroplane in the world, at the beginning of its first trial flight at Farnborough, may prove a precious lesson, as many another disaster has done. The wrecking of the great machine, involving the deaths of two captains, seems to have been due to the sudden development of the full power of the Napier engines, which should not have been opened out completely before the Tarrant rose from the ground.

The loss of this marvel of British construction, weighing about 40,000 pounds, brings out the importance of the new invention of metal-built machines. Captain Thurston has been working secretly for years during the war in discovering steel and alloys suitable for aircraft, and with the help of English bicycle-making firms metal spars are now being made which are both lighter and stronger than wooden spars. With special steel or aluminium alloys the construction of gigantic machines is now possible.

In 1912 the structural strength of the wood limited the weight of machines to five tons, but during the war means were found of using spruce, so that the weight of the structure could be increased, until the Porte flying boat of 15 tons and the Tarrant triplane of 18 tons appeared. Now, however, the strains and difficulties of changing temperature have so increased that only the metal-made machine seems likely to develop into a great passenger liner.

SAFETY FLIGHT ROUND FRANCE

British machines are invited to compete in the important circuit of France, starting on August 24. Machines will fly round France, descending at six landing places, by the English Channel, Bay of Biscay, Mediterranean, the Rhone, the Vosges Mountains, and Paris.

The race will be different from all others, because the fastest machine is not likely to win the prize. The French authorities rightly place airworthiness before speed, and the competition is designed to prove which is the safest machine in the world.

For each stage of the flight ten points will be awarded, making 60 points in all. Pilots, however, will lose a point if they have to make a forced landing or have to change propeller, wheel, rudder, landing strut, or axle during the tour. A bad radiator will lead to a loss of two points. A weak wing will cost five points, which will also be the penalty for a bad cylinder or crank shaft.

THE RACE FOR HEIGHT

In an unofficial way the Australian pilot, Captain Lang, still holds the world's record for height by the climb of six miles he made above Yarmouth last January. But his height-recording instrument does not yet seem to have been checked.

In the meantime an American pilot seems to hold the official world record with the height of 28,545 feet, and a Frenchman, Sadi Lecoq, has advanced the height record of his country 1476 feet by climbing 27,560 feet.

The French now seem to have overtopped the altitude reached by Captain Lang. A French Army aviator, Lieutenant Casale, claims to have reached 30,612 feet in a Nieuport machine, and, according to report, the marvellous climb took only 41 minutes. The height is 1610 feet above Mount Everest.

WANTED—A PLANT CONTROLLER

Alien Who Will Not Be
Demobilised

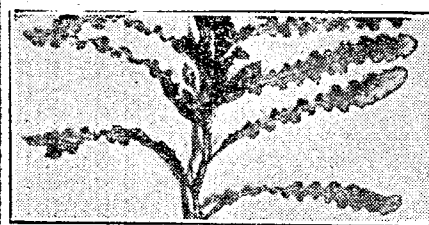
BATTERSEA POND OVER-RUN

By a Natural History Correspondent

In a pond in Battersea Park a friendly alien gained a footing two or three years ago, and refuses to be demobilised or to go back to its own country. It is the American pond weed. It is a thruster among weeds, and when it gets going in a pond nothing seems to discourage it.

Its arrival at Battersea was rather curious. The pond where it is now flourishing, covering the water with tiny white flowers, is just by the side of the lake from which water sometimes trickles into it under a rustic bridge.

It is a charming pond, over which laburnum and lilac and hawthorn hang their blooms in spring, and it is bordered with reeds and rushes all the year. In one corner of it is a little enclosure, wire-protected, where a few unusual pond



The weed which is choking the pond in Battersea Park. See back page

plants used to be kept, and presumably the American pond weed was one of them. There are many fish in the pond, and some big carp, nosing about among the wire, broke it down and let the American pond weed through.

Never did visitor make itself more thoroughly at home. Last year the gardeners used to spend mornings in an old skiff on the pond, hauling up the weed in bundles and carrying it to land, and by late autumn there were no traces of it. But this spring it has put into the shade all its previous efforts, and the prospects of getting rid of it are exceedingly small. It cannot be done. The only way is to haul it up by manual labour and throw it on the bank, where it looks like rather pretty green seaweed until it dies.

In the pond of a scientific institution near Elstree it made its home some years ago, and the most drastic treatment has left it still in possession. The scientific staff tried copper sulphate, renowned as a weed killer, but in vain. The pond was drained and cleared, but the weed bided its time, and when the pond was filled it came up again.

LOOK TO YOUR PETS

By the Children's Doctor

Boys and girls who have pet cats and dogs should watch them carefully now, and on the first symptom of illness should confine or muzzle them.

An animal with hydrophobia is not always furious, and in some cases simply becomes very quiet and depressed. An animal may suffer from the disease for some time before it shows any symptoms of madness, and even in these early stages, when it seems quite well, its saliva may be poisonous. Children should never allow cats or dogs to lick their faces or hands, for, even if there be no cut or scratch, the poison may be absorbed. In any case, the habit of allowing animals to lick the face and hands is unclean and unpleasant, and is often the source of disease.

So long as hydrophobia is prevalent any bite by a dog or a cat should be thoroughly washed and cleaned with an antiseptic solution, and then cauterised. Pure carbolic acid or pure Iodozinc may be used for cauterising purposes, and of course a doctor should be seen immediately.

JOHNS OF ENGLAND PLAIN MAN AND CRAVEN KING

How They Meet on the Map
This Week

250,000 MILES ON HORSEBACK

This week brings round the 704th anniversary of Magna Carta, which helped to make England free; and a great man, John Wesley, who helped to purify the nation's heart. Two Johns—a wretched John who was a king in name, a plain John who was and is a king indeed.

What Magna Carta Really Did

Many of us were taught at school that Magna Carta is the foundation stone of English liberty, but we were taught what is not literally true. Magna Carta solemnly laid down rules of Government that were very important to all kinds of people, for it restrained kings from acting oppressively; but it left the people under the power of their local lords.

In signing it King John made this splendid promise, which every English king since has repeated:

To none will we sell, to none will we refuse, to none will we delay justice.

That is a noble rule expressed with a fine simplicity; and the Great Charter contained many other safeguards against bad government. It arranged that courts of justice should be held regularly where freemen's cases might be tried.

But most of the people of England were not freemen. They were serfs who had to remain on the lands where they were born; and their doings were judged in the local court of their "lord."

It was these lords who forced King John to sign the Charter which confirmed to them their liberties; and a lord's liberty was his right or privilege of ruling his people on his own estate in his own court. It was not liberty on behalf of all people as we understand it today, but the liberty of the barons.

The real liberty of the people was won hundreds of years later than Magna Carta, and is not even yet entirely won, for fragments of the unjust power of little local lords remain in a shadowy way to this day. While the Charter restrained kings from tyranny it confirmed in power lords whose fitness may be judged from the fact that only three of the 26 barons could write their names.

Not even King John could sign his name, so that he never really signed the Charter. He sat by on Runnymede, fuming with rage, while the lords compelled him to submit.

What John Wesley Did

John Wesley was the founder of Methodism, and one of the greatest preachers of all time. He was the son of a Lincolnshire clergyman, and an earnest churchman himself. But in the early part of the eighteenth century the moral state of the English people was deplorably low, and the Church was sunk in indifference.

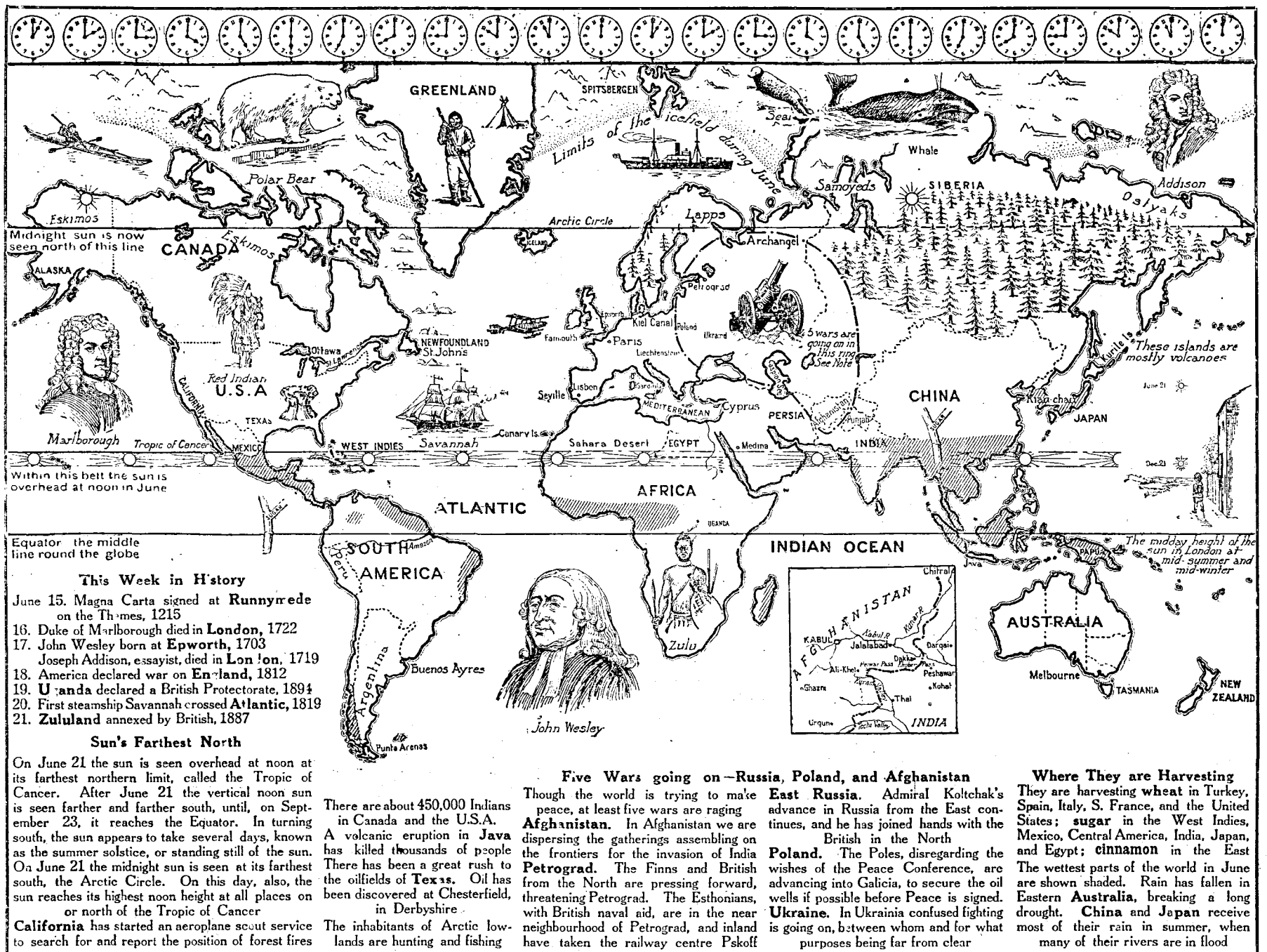
Though Wesley was a clergyman he was excluded from most of the churches for preaching true individual faith and purity of life as he found it taught in the Scriptures, so that he was compelled to preach in the open air, where vast audiences gathered, at first to jeer and persecute, but at last to give him a welcome resembling a triumphal procession.

He was one of the hardest-working men who ever lived; it may be doubted if any man did more work in a lifetime.

In fifty years he travelled 250,000 miles, chiefly on horseback, and delivered 40,000 sermons. He also wrote many books, chiefly to assist his preachers.

The direct effect of his preaching on the people, especially in the mining districts, was deep and lasting. He was a modern prophet who gave England new life after it had become a foul fen of stagnant waters.

PICTURE-NEWS AND TIME-MAP OF THE WORLD



HOW MANY SOUNDS DO WE HEAR?

Interesting New Idea

How many different sounds can the ear distinguish? The theory of Helmholtz was that the ear possessed 16,000 tiny "strings," each responding to a different sound, and that there was a central nerve station conveying the sense of sound produced by the resonance of these strings to the brain.

A new theory has now been propounded by Sir Thomas Wrighton, who believes that the ear is really a delicate spring balance which weighs the weight of the sound waves, and communicates these weights as sound to the brain.

This would mean only one piece of mechanism in the ear, as against 16,000 supposed by Helmholtz, and it is quite conceivable, because all the strings and wind instruments in a chord played by an orchestra are reproduced in the gramophone by one depression in the record.

There is no such thing as sound really! If 256 air waves follow each other in a second, we hear the note C; if twice that number follow in a second, we have the C an octave higher. The quality of the sound—a human voice or the tinkle of a bell—depends on the shape of the fronts of the waves.

These disturbances of the air make the ear-drum vibrate, and the ear mechanism converts the vibrations into what we call sound. It is the brain which makes the music or noise for us out of what is merely mechanical motion, just as it makes light out of what are merely waves passing through ether.

HOMES OF THE HERMITS

Silent Haunts disturbed by the Guns of War

Although we have not been allowed to know it until now, guns were booming during the war in places unpeopled since mediaeval days. To defend our naval base in the Forth all sorts of auxiliary guards had to be constructed, some on shore, some on rocky islands where tide and tempest made the work as perilous as the building of a lighthouse.

This reclaiming of the little Forth islands has a special interest for us, for the storm-swept islets were once the homes of profoundest peace. It was there, down to the Middle Ages, that monks and hermits lived, some for the love of God, some out of disgust with the world. They chose these solitudes for study, reflection, and prayer; and their homes were among the beacon-towers of the world's learning.

In his dim cell the old monk would ponder and write, and if he were a man of original mind his writings would draw to him pious students from all parts of Europe. They came to borrow his writings, and to lend him the works of other men of his age. The messengers braved flood and torrent, dizzy mountain path, and tempestuous sea to promote the flow of knowledge. While the rest of Europe was benighted and barbarous, these men kept a torch dimly burning ready to hand on to the next generation.

The tide of war carried us into these haunts of ancient men, who showed a nice discrimination, by the way, in choosing salmon rivers by which to live.

LEAGUE OF NATIONS GETS TO WORK

Saving America £120,000,000

The League of Nations is getting to work. The first meeting is to be in Washington in December, and Mr. Lloyd George is arranging to be there. America will welcome the League, we may be sure, for it seems likely to save her many millions of pounds.

At the end of last year, Mr. Daniels, Secretary of the United States Navy, proposed that America should build a large number of warships at a cost of £120,000,000; now he says that as the League of Nations has been formed those ships will not be necessary. This is how he put it to the Naval Committee of the American Congress: "Since December the allied nations have been in conference and have drafted the Covenant of the League of Nations, in which I have the greatest confidence. It is the most momentous document for 2000 years. I firmly believe that Congress should not approve any additional construction further than that authorised by the 1916 programme."

If Congress takes Mr. Daniels' advice, America will build two battleships instead of 16, and will save the nation £120,000,000.

That will be a saving of ten times as much as we are to spend on old-age pensions this year; and yet there are still people who go about saying that the League of Nations is not a business proposition! We shall see.

A halfpenny stamp will take this paper to any child in the world

PORT OF GIANT SHIPS

Liners Too Big for Our Harbours

The largest liners are unable to enter the great English ports like Liverpool and Southampton unless the tides are favourable, yet shipping experts declare that still larger liners are going to be built for the Atlantic traffic.

The Britannic is 900 feet long, but it is certain that the next large liners will be at least 1000 feet, and these will need something larger and more commodious than now exists in the way of berths for loading and unloading. Can the old ports be adapted to the new conditions?

That is the great question exercising shipping experts. They declare that the cost would be so great as to render their use unprofitable; and it is suggested that a new port for all these giant liners should be constructed at St. Just, near Falmouth.

There is a great natural harbour of deep water at St. Just, well protected from the Atlantic billows and storms, with no bar or other natural disadvantage, within easy railway distance of London, and with accommodation for piers of 3000 feet. The cost would be low, and the journey between New York and London and the Continent would be considerably shortened. New York to Liverpool is 3015 miles, and New York to Southampton 3065 miles, whereas New York to St. Just is only 2917 miles. Trains would bring St. Just within five hours of London, and the journey from New York to London would be shortened by over six hours.

CHILDREN'S NEWSPAPER

JUNE 14 1919

Those Who Seek
Shall Find

It is always coming true, the old, old promise, and we see it again and again in these wonderful days.

They have been searching for oil in Derbyshire. For months the optimists have been searching with the pessimists looking on; and at last the oil burst out, and no man knows what boundless wealth may come from it.

There are more treasures in Nature's strongholds than men have yet got out of them, and the doors are waiting for man to unlock. He has only to take the key of knowledge, fit it into the lock, and turn it, and all the wonder and glory of the earth are his.

The tale is not yet told how Nature helped to win the war, how one by one she yielded up her secrets to the friends of freedom who were knocking at her doors. When the enemy came with his submarines, men strained their ears to listen in the silent waters for the pirate boats as they came on; and they won from Nature a new power of hearing, so wonderful that at last they could hear the submarine far off and tell the sort of boat it was, and the sort of engines driving it.

When our men went over the top in France they had a partner of whom they little guessed, for Nature came to their aid in that dread hour, and the emotion stirred in them set to work powers that gave their bodies new and sudden strength. True it is that Nature comes to our aid in time of need.

And all around us those who seek are finding. How astonishing are these wireless wonders! The barriers that have stood in man's way for centuries are breaking down. Time and distance will soon be almost unknown, for science is overmastering them. A man sits in his laboratory, playing with his tubes, peering through his lenses, and thinking from morning till night, and suddenly a barrier breaks down in the heavens, the mists are rolled away, and a new power opens out. Something new in wireless is found, some problem solved.

Men have flown from America to Europe. They have talked from continent to continent without any wires. Children pick up a little receiver and listen to music played in another town. A man is speaking at a meeting when a voice from the skies disturbs him and addresses the meeting from a mile up in the clouds.

So the news comes day by day, and we are too near it all to know how great it is. But those who seek will find, and those who live will see.

A. M.



THE EDITOR'S TABLE

Fleetway House, Farringdon Street, London
above the hidden waters of the ancient River
Fleet, the cradle of the journalism of the world



One Wretched Man

How many people are there in the world, one wonders, who dread the coming of peace? That is a pathetic story of the wretched man who is to die as soon as peace is signed. He is probably the only man of no account whose name has been mentioned in an Allied Note to the German Government. He is a German prisoner who broke into a house and killed a farmer and his wife, and for this crime he was sentenced to death exactly a year ago. In order to keep that international law so often broken in the war, the execution of the sentence was to be suspended till the signing of peace; and so every day the war lasted, with all its frightful death-roll, gave this most miserable man new life. Curious it is that the peace that ends the war must take just one more life.

Civilisation Like a Bird

Now that man can make the air his pathway, with the swiftness of a long-flight bird, the secret hiding places of ignorance and tyranny are suddenly revealed. A dramatic example comes in the news of Afghanistan.

All through the ages Kabul has been "out of bounds" in ordinary times for people who were not Moslems. Few have been there; fewer still have stayed. A doctor who remained some years to attend the Ameer was a wonder. We have broken through the mountain ring with our armies, but never stayed. Once, when we withdrew our troops, all except one man were killed in trying to get away through the passes. So that we have been glad to keep out, and to be moderately friendly at a distance. But now, within a few days of the childish threat of the new Ameer to seize the Empire of India, a safe boast as he thought behind his mountain fastnesses, our aeroplanes have flown to his secret city, and blown sky-high his store of ammunition. Neither Kabul nor any other stronghold of ignorance is far from civilisation now.



Miss League of Nations

The Mother of the Children's Newspaper in her July dress—the frontispiece of My Magazine this month, side by side with this paper on the bookstalls

The Man with Great Possessions

Four out of every five demobilised soldiers are said to be in work again, but one in every five is still seeking work to do. No more pathetic appeal has been made to the nation than Sir Douglas Haig's appeal for these men—V.C.'s and D.S.O.'s among them—who trudge our streets for work. An officer called on the editor the other day and told of a man—a man whose name everybody knows, a very rich man—to whom six of his old staff have been to ask for work. He has turned them all away because, while they have been at the war, men who have not been there have taken their places and are doing well. They won the war for him while he grew rich; they could give him a free country to live in, but they could not give him honour—this miserable man with his great possessions.

Proverb of the Day



To the Bolshevik who would Overthrow
Everything

Good Broth may be made in Old Pots

G.H.Q. of Health

It is hoped that with the formal ending of the war the Red Cross will turn its marvellous energies to the work of peace. The great war for which all the world is waiting now is the universal war against disease, and a war like that will lead to triumphant victory for the human race with the Red Cross as its G.H.Q. What is wanted is that all the great ideas and discoveries of doctors and scientists everywhere should be brought together and put into application in the most effective way, so that, as the Allies united to put down war, the whole forces of civilisation should now unite to put down its next great enemy—Disease. It is a great work for all mankind, it is ideal work for the Red Cross to do, and there can be no nobler monument set up in memory of the war than a Red Cross of Health in every land on earth.

Summer suns are glowing
Over land and sea,
Happy light is flowing,
Bountiful and free.
Everything rejoices
In the mellow rays;
All earth's thousand voices
Swell the psalm of praise.

A Child's Prayer for Home

Give happiness, O Lord, to our home, that it may be the dwelling-place of peace.
Fill my heart with grateful love for those who have guarded and sheltered me through years of care and trouble. Make me worthy of the love of those who watch over me, those who think and labour that life may be pleasant and beautiful for me in years to come.
And through all trouble and danger bring me safely home.

BIRDS THAT MIGRATE
BY TRAINHow the Swallows Travel
Through the Alps

When the swallows fly south from England to sunny Africa they often find the cold winds troublesome, and perch by thousands on the trees and telegraph wires on the Swiss side of the Alps, resting before they attempt the flight over the snowy passes into Italy.

If the winds are very cold the unhappy birds become numbed and fall from their resting-places to the ground, where they would ordinarily die from exposure. But the Swiss boys and girls love the birds, and come to their rescue.

They pick them up, put them in warm baskets, and take them to the railway-station, where they hand them to the guards of the trains about to go through the great Simplon Tunnel. The baskets are packed carefully into the guard's van, and when the train emerges on the sunny Italian side, he opens the lids and sets the birds free to continue their migration in a more genial climate.

When the train returns into Switzerland the children collect their baskets to use for other distressed birds.

TIP-CAT

The Prince of Wales is a fishmonger. Now we shall get some fish.

A film firm announces that the Victory Leaders are to be screened. But what have they done wrong?

The naked truth: Hawker, going to see the King, wore a silk hat.

What everybody asked when news came that Hawker was safe: Who said Grieve?

The Germans at the Conference offered counter proposals. Do they think we are a nation of shopkeepers?

The Turkish Empire is to be suppressed. The Allies have decided to sit on the Ottoman.

Proper place for an orchestra: the band-box.

Pine trees are being sent from Minnesota to the devastated areas of France. Before winter they will no doubt send some firs.

A banjo band is the latest craze in restaurants. Soon we shall be picking our bonts to a tom-tom accompaniment.

A sky-lark: an aerial joy-ride.

PETER PUCK
WANTS TO KNOW
If the railway sleepers wake up when the trains pass over them
Everybody's footman: the shoe-maker.
Why did the willows weep? Because the flowers were wild.

Comforting to hear that Little Willie may settle down as a private person. So far, he has been a public nuisance.

The nurse who was ducked in a tepid bath has retaliated and got her duckers into hot water.

The only place in which war criminals should be harboured is the dock.



LORD COWDRAY'S ADVENTURE BOUNDLESS WEALTH IN SIGHT?

Oil Rushing from the Earth in
Derbyshire

STORY OF FAITH & WORK

It was round about the crooked spire of Chesterfield that the discovery was made upon which the great paraffin industry is based; and from that part of Derbyshire today comes news that is almost sensational in its promise, for men have struck oil.

Drillers have struck oil in quantities that seem to promise a mighty industry of supreme national importance. It is possible that the discovery will rank with the introduction of steam as a power that revolutionised our workaday England in the eighteenth century.

The starting of this enterprise is romantic. Oil has become as invaluable as coal, but the oil-wells are for the most part far away from centres of industry. If oil can be found in Central England a new source of wealth will be presented to the nation.

Lord Cowdray's Faith

The credit for this great and adventurous enterprise in Derbyshire is all due to Lord Cowdray. During the war the demand for oil was very great, and Lord Cowdray had the utmost faith in finding oil under the soil of England. So sure was he that he determined to spend £500,000 of his own money on the experiment.

But as a patriotic Englishman he urged the Government to take up the question itself, because in our old country, with its queer and hindering laws, there are great difficulties in the way of private experiments. Leave had to be obtained, with much expense and loss of time, to start borings; and the question of who would be the owner of the oil if it were found was not settled. Moreover, to let anybody bore anywhere for oil is shameful waste, for much of the oil runs away unused.

A Tank for 200,000 Gallons

To avoid this Lord Cowdray offered his services and his expert staff to the Government if they would spend a million pounds on boring. The Government did agree; and seven bore-holes have been sunk in Derbyshire.

Most of these bores have now discovered traces of oil, and two of them have reached depths at which, if the oil is there, it should begin to show itself freely. Indeed, in one of the bores, at Brimington, a tank to hold 200,000 gallons has been erected. Now another bore, a thousand yards deep, has reached what appears to be an abundance of oil of fine quality.

The sinking of oil-wells is always a speculation. There may be a failure in one place and a success close by. The supply may be small or abundant; the oil thin or rich. The average yield of a well is five tons a day, but wells have been known to yield 7000 tons a day.

Surprise for the Miners

Lord Cowdray's drillers have had strange experiences in Derbyshire, which is honeycombed with coalmines. They have drilled right into the workings of the mines, to the amazement of the miners below. They have had many breakages and accidents, for no man can judge what obstacles will be reached when three-quarters of a mile of earth is pierced. But oil is there, and it is quite possible that it will bring power beyond the wildest dreams.

Coming after the war, when the country is burdened with debt, it may do much towards reviving our lost prosperity. A rich oil-supply would be a marvellous natural gift to the nation, cheapening many things everyone must buy, and so bringing a blessing into every home.

HOW YELLOW PIGTAIL CAUGHT THE LIZARDS

How would you catch a lizard? In his fascinating book, "Jungle Peace," which we reviewed the other day, Mr. Beebe tells how a Danish flapper taught him how to catch lizards.

It was on a visit to the West Indian island of St. Thomas that he tried to get hold of some of the charming lizards which are "remarkably bird-like in their vivacity and their enthusiastic playing of their little game of life." They are as quick as wrens; they change their colours from moment to moment; when excited they puff out a throat-pocket of yellow and orange skin.

But catch them he could not; he broke his net and bruised his fingers; and the lizards, just out of reach, looked at him "derisively with their bright, intelligent eyes."

Then we read: "At the roadside I came suddenly upon a little Danish girl of about twelve years, dancing excitedly

with a lizard dangling from the end of a slender grass stem. Her blue eyes flashed with excitement, her yellow pigtail flew wildly about as she danced and backed away, fearful of touching the little lizard, and yet too fascinated to drop it and allow it to escape."

She showed Mr. Beebe how to make a neat slip noose at the end of a strong stem of grass. The lizards see the noose, of course, as it is moved gently towards them and eventually over their heads, but they do not connect the moving grass with anything dangerous, certainly not with the distant hand that wields the noose.

Thus, after years of effort, Mr. Beebe found a little Danish schoolgirl who solved his problem for him. It need hardly be said that this healthy-minded naturalist did not catch the lizards "for fun," but only to learn more about them at close range.

PETER PUCK CALLS ON THE GREAT MEN



Parliament is expected to settle down to Peace work with the signing of the Treaty; and Peter Puck dreams of a deputation like this, which may one day astonish the great men

A CAVE GIVES UP ITS SECRETS—LIFE OF AGES PAST

Two interesting items come to us from correspondents in Ireland and in India.

At Jubbulpore, in India, two miles from the mission house, there have been discovered the remains, 60 feet long, of a reptile said to have lived millions of years ago. It will take five years to dig out the fragments, join them together, and build up facts for scientists to found a report upon. When that is done, this monster from the days when reptiles possessed the earth may prove to be another nightmare giant such as that of which a skeleton is in our Natural History Museum at South Kensington, measuring over 80 feet long.

A tremendous discovery of the same kind has been made in the Castlepool Cave, in County Cork. On the floor of the cave, hidden by decomposed limestone and stalagmites, lay a bit of ancient history, consisting entirely of the bones of animals of other days.

Lowest down there lay the remains of huge bears; above them, and therefore of a later date, were the bones of the spotted hyena; and mingled with these were innumerable bones of reindeer which the hyenas had dragged in as their

food. Think of the marvel of that. Arctic and torrid zones met in the flesh!

We know that Arctic animals reached Ireland before she broke off from England and became an island. They came from the North by land bridges now beneath the sea. The bears have been identified as grizzly bears, which must have marched from America.

The Arctic hare reached Ireland from Alpine and Arctic Europe, and it survives in the Emerald Isle. But the hyena entered Ireland from Africa before the Straits of Gibraltar sank and before the North Sea formed. The reindeer came from the Arctic, and the hyena from the tropics, yet the two have now been found together in an Irish cave, and we know they must have lived together.

What are we to make of this? Surely the answer must be that there were many Ice Ages and not only one, and that the hyenas arrived during an era of hot weather which the reindeer had slowly accustomed themselves to tolerate. Today it seems as strange as if tropical humming-birds were found nested with Emperor penguins, which breed in the four months' night of Antarctica.

A NEW WAR

Who Will Fight Against
the Lackey Moth?

A BEAUTIFUL CREATURE AND ITS UGLY WORK

By Our Country Correspondent

The fruit crop, which was promising so well, is in imminent danger from an enemy who has marshalled his battalions and begun a great offensive.

This enemy is the lackey moth, and unless fruit-growers everywhere take steps at once for its destruction it may devastate our gardens and orchards and leave them as bare as if an army of locusts had passed over them.

The danger should have been met last winter, when the ringlets of bead-like eggs, laid so regularly round the twigs of apple and pear trees, might have been destroyed. These eggs remind one of a tight-fitting bracelet on a lady's wrist, and when the moth has laid them she paints them over with a quick-drying varnish to protect them from the weather, and she fastens them together so well that the entire ring can be slipped off the twig intact.

The Silken Thread

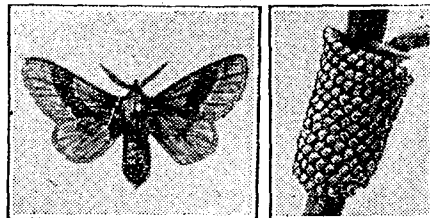
A few weeks ago these eggs hatched out into little bright caterpillars. These caterpillars live in communities, building for themselves a silken nest in which 200 may live together at one time. When the weather is wet or cold they remain indoors, but if the sun shines, out they come to forage for food among the leaves and buds of fruit trees. It is at this time that they make such havoc.

They are wonderful little creatures, and have a sure method of finding their way home again. When they go out they always spin a single silken thread by which to trace their way back, like the clue of thread into Fair Rosamund's bower. If you shake the tree, or alarm them in any way, they will suddenly let themselves down to the ground on threads, and when the scare is past will pull themselves up again.

Kill It

Late this month, if not destroyed, they will separate, find convenient places between leaves, or on bark or fences, and spin cocoons of silky material mixed with caterpillar hairs, and rendered opaque with a yellow powder, like flowers of sulphur. Then they will change into chrysalids and in July emerge as moths. In this form they are harmless, as they cannot eat, but they can lay eggs ready for a great swarm of caterpillars next year. So, whenever you see a lackey moth, *kill it*. As it hides by day and comes out only at night it is difficult to catch it.

Now, however, is the time to make war, and though the Food Production Department is advising spraying with arsenate of lead, it is better for those whose orchards are not too large to look out for the webs, cut the shoots off, and destroy the nests with their inmates.



The Lackey Moth and Its Bracelet of Eggs

Choose a wet or dull day when the caterpillars are at home. If you do not do so now you may have little fruit this year and none at all next.

Long rows of trees are denuded of their leaves, and an orchard destroyed by the lackey moth looks like a war area. Its blighted, cobwebby appearance gives a creepy and uncanny feeling.

Have you seen My Magazine?

NEW TREASURE FOR THE NATION

Natural Marvel at South Kensington

INSECTS IMPRISONED FOR FIVE MILLION YEARS

By Our Museum Correspondent

Our museums are the treasure-houses of the nation; they are crammed with the wonder of the world. The Children's Newspaper has appointed correspondents at our chief galleries, who will tell us of new treasures arriving and of the interest of the old ones.

A collection of insects some millions of years old can be seen at the Natural History Museum in Cromwell Road, where it was lately deposited after having been sent from Burma.

In its way it is a very complete collection, for it contains examples of nearly all the large orders, with their impressive names, but it is very carelessly put together. Evidently no enthusiastic insect hunter could have collected these flies and beetles, butterflies, cockroaches, and gnats, because at the time of their collection there were no men on the earth; and—to make no more mystery about the matter—the collection was made by Nature herself in one of her accidental ways.

Flying in a Manless World

The insects now imprisoned in Cromwell Road were in those days, millions of years ago, flying about in some Burmese jungle, and in their search for honey found themselves stuck, as flies on a fly-paper, in the gum oozing from some forest tree. The tree, or the gum, went on collecting insects in this way for years, and by and by the tree fell, taking the collection with it. Then came a tropic thunderstorm, bringing with it a flood; or perhaps the tree overhung a river that ran down to Mandalay or Rangoon, and fell into the stream.

It is certain that somehow the tree, with its gum and its priceless collection of insects, was washed away and buried, first lightly, and then deeply, in the clay of the river bed. There it rested secure from all the changes of climate and time.

How the Amber Came to be

Millions of years passed by, the very country where the collection was gummed together rose and fell, and was covered now with forest, now with water. New kinds of animals, reptiles, and mammals walked over it, and at last man came to Burma.

Still the insects lay buried, and were undiscovered, but in all these hundreds of thousands of years, though the insects remained unchanged in the gum, a change was coming over the gum itself. It was changing into amber, that clear, polished, orange-coloured stone which ladies wear as necklaces, and which for hundreds of years has been believed to possess magical properties.

So it does, though many of the ladies do not know it; for if it is rubbed it begins to crackle with electricity, and that is a way in which it can always be distinguished from imitations in glass.

Actual Touch of the old World

At last there came a day when the block of amber, with the insects still imprisoned in it, was discovered by a seeker after this precious stuff; and it was bought, together with a number of other examples of "red amber," by Mr. Swinhoe of Mandalay, who has given it to the nation.

Such is the past of the red amber specimen at Cromwell Road, probably five million years old; but it has a more valuable future. Experts will examine it, and from it they can tell what insects lived in those long-distant days, and how and where they differed from those that have descended from them through millions of generations in unbroken line. For these insects are here as they were in life, clearly seen and well preserved, an actual touch of the world before man—exactly as it was. E. S. G.

EUROPE'S CINDERELLA

Country the Peace Conference Has Forgotten

ARMY OF 91 MEN

The Peace Conference has not only forgotten the Children's League of Nations; it has forgotten a country!

Tucked away between Switzerland and the Austrian Tyrol is the little Cinderella State of Europe, Liechtenstein. So small is it that it is not often marked on the map of Europe, though it is an independent State. At present the inhabitants are very indignant, for their State has been slighted. Though an independent European State, it has received no invitation to send a representative to the Paris Conference, and a letter to the Big Four to remind them of its existence was calmly ignored.

This is not the first time that Liechtenstein has had to endure this mortification either. Half a century ago Liechtenstein was declared to be at war with Prussia over the Schleswig-Holstein question, and when peace was made Prussia quite forgot that Liechtenstein had been in the war, and did not take the trouble to make peace with her, the result being that, though no one knew anything about it, Liechtenstein has been at war with Prussia ever since.

Liechtenstein deserves to be recognised, for she is an anti-military State, conscription having been abandoned by the Liechtensteiners in 1868, before which date she had kept up a regular army of 91. It is a shame that this little State of 60 square miles, with a population of 11,000, should be so treated, and as a protest we have put Liechtenstein on our map this week.

SURPRISE FOR THE RAILWAY BIRDS

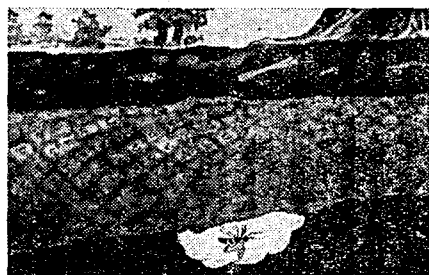
Robbing Them of a Feast

In the height of the herring season it often happens that fishermen bring in what is known as a glut catch. The haul of fish is so great that the fish curers and buyers cannot deal with it; and in this country such fish is often sent straight to the farmers and put on the land as manure.

The birds in these fishing districts keep a strict watch for the fish, which



How the fly got in the amber



How the amber was found the other day. See story on this page

are piled in open trucks and sent by rail into the country. They follow the trains in large numbers, and speedily deprive the farmer of half his purchase.

The chemist is going to rob the birds of their feast, however, by using this fish offal for extracting oils, glycerine, and fats for margarine.



The Germans now admit that 199 submarines were lost in the war.

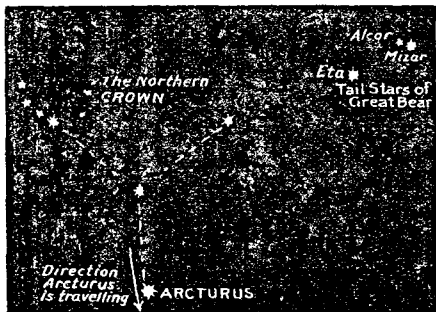
An extension of self-governing powers is being asked for by the people of Malta.

The flooding of the River Paraguay has swept away a large number of houses.

Mr. Hawker used 170 gallons of petrol on his Atlantic flight—just half his supply.

It is expected that the Palace of Peace for the League of Nations will be built on the shores of Lake Geneva.

The journey from Glasgow to the lonely island of St. Kilda has been made for the first time in an open boat.



How to find Arcturus, the giant sun

The Fire Brigade boys of Blundell's school in Devon saved £4000 worth of stock in a Tiverton fire the other day.

In filming the Allied leaders in the war the photographer travelled 4000 miles to reach all his distinguished subjects.

Five hundred miners were imprisoned all night in a mine near Caerphilly, owing to a boy's carelessness in stopping a machine.

London was never so crowded, yet the Government is still holding up 20,000 bedrooms in hotels. One of these hotels used to employ 1000 men.

We much regret that Mrs. Ella Wheeler Wilcox is unable to continue her Letters to Girls through serious illness. She is in a nursing home at Bath.

The M.P.'s Crab

An M.P. told Parliament the other day that he had just been charged 3s. 6d. for a very small bit of dressed crab, whereas before the war he bought a whole crab for fourpence.

A Skeleton's Slippers

Twelve years ago a cook disappeared from the Murrough district of Galway. Nothing was heard of her, and the mystery was never solved. She had left the house wearing slippers, and no trace was seen or heard of her for twelve years. Now she has been found in a thick shrubbery near the place where she disappeared. She was just a skeleton in slippers.

Going to Hear Him

There have been some great men in Parliament, but there have been more great voices. The Speaker has been telling the story of a man with a very loud voice. A Member was once coming out of the House in a hurry, and somebody asked where he was going. "Jones is up," he said. "I am going on the terrace to hear him."

A New Sort of Tramway

Birmingham is trying a new plan for giving its tramways a clear run. The tramway line, eleven yards wide, will be raised nine inches, and except at crossings made at convenient intervals no other traffic will be allowed over this central strip. This, it is expected, will quicken the trams considerably. All underground pipes will be laid beneath the walking way, so that repairs will not cause any disturbance.

DURING YOUR HOLIDAYS

For eight penny stamps the publisher of the Children's Newspaper, Fleetway House, Farringdon Street, E.C. 4, will post this paper to you at any address for one month

BRIGHTEST STAR IN BRITAIN

Great Giant Arcturus

LIGHT THAT TAKES A LIFETIME TO REACH US

By Our Astronomical Correspondent

When looking for Saturn or other bright objects, high up in the southern sky, the eye must frequently have noticed a beautiful golden star, far brighter than Saturn. It is Arcturus, one of the greatest and most impressive wonders of the heavens.

It cannot be mistaken, for it not only outshines all the stars near it, but is the brightest star in the whole sky at the present time—of course excepting the planet Venus away in the west.

Fourth Brightest Star

It is actually the fourth brightest star in the sky, and, after Sirius, the finest ever seen in Britain. Its colossal magnitude makes it rank as one of the largest suns known to exist, and if it were as near to us as our Sun we should have a gigantic globe similar to our Sun, but two thousand times larger, pouring down far more than two thousand times the heat and light upon our tiny Earth—because, owing to his much greater bulk, its surface would be much nearer to us. No one would want a place in the Sun then—we should all be migrating to the Polar regions.

But unless the Earth moved very much faster in its orbit to counteract the enormous pull of gravitation possessed by such a giant, it is certain he would draw the Earth towards him, and our world of human turmoil would end in a wisp of flame.

15,000 Miles a Minute

His speed through space is enormous, over 15,000 miles a minute, 650 times greater than a bullet's speed. Yet, notwithstanding the enormous speed at which it is travelling at right angles to us, it appears to be almost in the same place in the sky that it occupied hundreds of years ago; it seems to have moved only about half a degree, or the apparent width of the Moon, since the battle of Hastings was fought 800 years ago.

Let us try to measure the distance Arcturus must have travelled in those 800 years, flying along at the rate of 21,000,000 miles a day. We shall find that a string of figures running into billions upon billions will result, stupendous but quite inconceivable; yet this vast line of imaginary milestones, representing the terrific journey of Arcturus, only appears to us the width of the Moon in the sky.

If It Were Blotted Out

A wave of light from Arcturus takes ninety years to reach us. Indeed, if Arcturus were suddenly to be blotted out of existence no one in this generation, unless he lived to be over ninety, would ever know of it, for its light would still be travelling over the gulf between us, and we should think it was there.

It is five and a half million times as far away as our Sun; and when we remember that it would take over a hundred years to reach our Sun on an aeroplane travelling at a hundred miles an hour, there is a 550-million-year journey before us to reach Arcturus.

Or suppose we were to construct a model, placing the Earth and Sun as close together as our two eyes—less than two inches apart—then we should have to take a train down to Devonshire, say two hundred miles away, and put our model of Arcturus there to have it at its proportionate distance away.

This is something to think about when we look up at this lovely and serene golden star.

G. F. M.

MISCHIEF-MAKERS An Enemy of the Rose LIFE STIRRING IN THE PONDS

By our Country Correspondent

If we live near a pond it is interesting to watch the evolution of the frog from its jelly-like spawn to the perfect frog, which will soon be hopping in the grass. The young tadpoles are now nearly full grown, and are getting their forelegs. They will not remain tadpoles much longer, for with the coming of their hind legs their tails will get less till they are gradually absorbed. They form a store of nutriment for the creature during its transition from the tadpole to the frog.

At the present stage, with their front legs appearing, the tadpoles are amusingly frisky, and use their tails to propel themselves through the water.

A Handsome Rascal

With the increasing bounty of nature, and all the beauty that advancing summer brings, it is unfortunate that many mischief-makers should be getting abroad, and two of these we shall probably find this week if we look carefully. One is the very handsome rose beetle, and if his deeds were as fine as his coat we might regard him with admiration.

His upper surface is a rich metallic green, glossed with gold, and the wing-cases are spotted with irregular white marks that rather enhance the rest of the body. Underneath he is like glowing copper. His name declares that he is at home in your choice roses, and when you search in the very hearts of them, and see the damage he has done, you will forget his beauty in thinking of his evil ways. The fruit farmer is no more fond of the rose beetle than the gardener, for it eats the blossom which produces the fruit.

The Asparagus Pest

The other mischief-maker is the asparagus beetle, a handsome-enough fellow, with his dark green wing-cases marked with yellowish white spots, his bluish-green head, and blood-red thorax. On the feathery branches of the plant from which he takes his name he certainly looks very attractive, but from the spindle-shaped eggs which the female lays emerge grubs that do immense damage in the asparagus beds. All through the summer the creature may be found in all its stages from the egg to the perfect beetle.

The dagger moth and silver Y moth are both on the wing now, and the eyed hawk moth, one of the most striking of the hawk moth family, is getting common in the South of England. The large eye-spots on the rosy-red hind wings make it easy to identify.

Turtle Dove's Eggs

In birdland the young redstarts and greenfinches are fledged, the partridges are hatching out, and the turtle-dove has laid her two creamy white eggs in the nest of twigs and sticks which she built in a small tree or hawthorn-bush.

With a few days of bright, warm sunshine strawberries should be ripe; and among wild flowers we may look out for creeping cinquefoil, henbane, mare's-tail, meadow, musk, milk, and marsh thistles, chamomile, good King Henry, meadow cranesbill, sweet-william, corn cockle, forget-me-not, sweet briar, bee orchis, black knapweed, and viper's bugloss. C. R.

NEXT WEEK IN THE GARDEN

Plant out celeriac in rich, sandy soil and make successive sowings of mustard and cress, kidney beans, and spinach. Sow or plant out cucumbers on ridges for pickling. Transplant leeks. Continue sowing and planting out lettuce, watering frequently in dry weather, and tie up plants for blanching as required.

Stake plants in the flower borders that need it, and thin out annuals as they become large enough. Keep the grass cut short and see that neatness prevails.

STORY OF THE ARCTIC NO MAN'S LAND

It is 300 years since the English and the Dutch Governments began to dispute as to which country should have sovereignty over the Arctic Islands of Spitsbergen, and today they are still disputing. Instead of coming nearer a settlement the matter has become more complicated than ever, for the Norwegians have also put forward a claim to this territory, and the Americans have claims which will have to be heard.

At last there is a prospect of the matter being settled, for it will probably be referred to the League of Nations.

The first discoverers of Spitsbergen were doubtless the old Vikings, the brothers of the men who visited America 500 years before Columbus set foot upon its shore. So far as the modern nations are concerned, however, the Dutchman, Barents, was the first to sight the islands in 1596. But he passed on without exploring, and it was the Englishman, Henry Hudson, who first landed there in 1607. He came back and gave such a glowing account of the immense numbers of seal about the coast, that several expeditions were sent out. Soon the Dutch heard of the profitable hunting to be obtained in the islands, and they,

too, sent expeditions, and in the end England and Holland were at logger-heads as to who should own the islands. The Dutch claimed them, because Barents had first discovered them. The English claimed them because Hudson was the first to explore them and to start the hunting.

As the diplomats could not settle the question the hunters took matters into their own hands and tried to drive each other away by force. Then, to make matters worse, the King of Denmark claimed the islands, for, he said, by old tradition the King of Denmark is lord of all the Arctic Ocean.

At the end of last century the dispute became fiercer, for large deposits of iron and coal were found, as well as marble and asbestos, and each nation became more eager than ever to secure what might prove to be territory of huge wealth and importance.

In 1914 delegates sat at Christiania to discuss the question of Spitsbergen, and devise some government for this No-man's-land of the Arctic, but the war broke out and the conference was abandoned.

Now there are British, Norwegian, and American companies working the coal, and the promoters of these enterprises are pressing for a settlement of the old question—who owns Spitsbergen?

HOW MUSIC PUTS SOLDIERS OUT OF STEP

While the United States were training their citizens to take part in the war, there was an account, in rhyme, of a little boy who went to see his father being drilled in one of the recruiting camps. He came back full of his experiences, and told his sister how

The sergeant he cried "Hep!"
And all the men but father
Were marching out of step.

As a matter of fact, even better-trained soldiers than father get out of step, and they do so under rather peculiar and unexpected conditions—when they are following the beat of the drum.

Soldiers, when they are very fatigued, or are travelling to or from the front line over rough roads, seldom keep step, but that is not at all the sort of mistiming that we mean. Suppose a long column of soldiers is marching to the time set by the beat of a drum, or by the repeated beat of any musical instrument. The soldier next to the drummer follows the drum-beat exactly. But sound travels at the rate of 1060

feet a second, or 265 feet in a quarter of a second, so that a soldier 265 feet away from the drum hears the beat a quarter of a second late.

Now, soldiers march at the rate of 120 steps a minute, or two steps a second, or half a step in a quarter of a second. Consequently the soldier who hears the beat of a drum a quarter of a second late falls half a step behind. In other words, he has his foot in the air while the man next the drum has his foot on the ground. If you look at a long column of soldiers on the march you will be able to see the feet of the men striking the ground in receding waves as the sound passes down the line. At 265 feet away they are out of step; at 530 feet away they are in step with the two leading files again. But the oddest thing of all is that if the music stops, the soldiers, after two or three seconds of shuffling, get all into step together! They will continue to march in step without the music, as if some power of mind kept them together; but when the band begins again, they once more lose this perfect unison.

WHY DO WE GO TO SLEEP?

Shutting Out the World from the Body

TORRENT OF MESSAGES ALWAYS POURING IN

From a Professor's Chair

Blessed be the man, said Sancho Panza, who invented sleep, and everyone says Amen.

But what makes us go to sleep? To get rest and refreshment, of course; the need for making good wear and tear, and for giving the changes that are always trying to keep us young a chance against those that are always tending to make us old. That is all good sense; but what is it inside our bodies that makes us go to sleep?

It may be said that we are creatures of habit, and the body very readily gets into the way of being rhythmic, of being hungry at a certain time, waking up at a particular hour, and going to sleep regularly. There are small green worms called convolutas which come up on the sand of the sea-shore when the tide goes out; and this habit is so engrained in them that they will continue for days coming up at the proper time even when confined in an aquarium where there is, of course, no tide.

This is one of the ways of living creatures, to become like wound-up clocks; and this has something to do with our going to sleep. But it is only a little bit of the story.

Why We Darken Bedrooms

When we are ill, and it is very important that we should sleep, the room is darkened and everything is kept as quiet as possible. This is not with the idea of making our body suppose it is night; the reason is much deeper.

For one of the reasons why we keep wide-awake is that there is always pouring into us a torrent of messages from the outer world, through all the gateways of the senses—eyes and ears, nose and skin—and these messages, like telephone-calls, keep us on the alert. If all these calls could be stopped we should probably go to sleep at once.

Some dull people, who do not get many messages from outside, go to sleep very easily; but by following out this idea we understand what Professor Bergson meant when he said that we never go to sleep if we are more interested in anything else than going to sleep.

New Theory of Sleep

There have been very many theories of why we go to sleep. One that long held the field was that when nerve-cells in the brain get fatigued with work or worry they contract a little, and their delicate linkages with their next-door neighbours are uncoupled, which is like breaking the circuit in an electric installation. But the favourite theory now is that sleep is a slight poisoning, similar to the poisoning of fatigue.

The slight poisoning that sends us to sleep saves us from over-fatigue.

What has been proved is that the body of a man suffering from lack of sleep contains a poison which, if injected into another man, produces an overpowering sleepiness, and in sleep the poison is got rid of. A very important practical rule is that if we are not sleeping well we should secure more open air, more exercise, a simple diet, and moderation in all things. J. A. T.

NOT SO MANY BAD PEOPLE

The smaller number of people in English prisons is very striking. Twelve years ago the number in penal servitude was 2914 men and 124 women. In April this year the numbers were 1261 men and 90 women. In local prisons the numbers twelve years ago were 17,294 men and 2652 women; now the numbers are 5568 and 1145.

NATURAL FACTS OF THE DAY



The universe moves to order like a clock. Sunrise and sunset, moonrise and moonset, high tide at London Bridge, ever they come and ever they go, while nations rise and fall.

Here is next week's time-table of sun, moon, and sea, given for London, from Sunday, June 15.

Time-table of Sun, Moon, and Sea

	Sunday	Tuesday	Friday
Sunrise	4.44 a.m.	4.44 a.m.	4.44 a.m.
Sunset	9.16 p.m.	9.17 p.m.	9.18 p.m.
Moonrise	10.28 p.m.	11.25 p.m.	12.10 a.m.
Moonset	7.29 a.m.	9.49 a.m.	12.16 p.m.
High Tide	4.4 p.m.	5.10 p.m.	7.11 p.m.
Moonset	Black figures indicate next morning.		

Next
Week's
Moon



Other Worlds. Venus is high up in the West and is approaching Saturn, which is in the South West. Jupiter can be seen low down in the West at twilight.

In order to do anything worth doing, we must not stand shivering on the bank, but jump in and scramble through as well as we can.

Song with Music Next Week

ICI ON PARLE FRANÇAIS



La cheminée Le raisin La malle



La tasse Le chat Le pain

La fumée sort par la cheminée.
On fait le vin avec le raisin.
Jules a perdu la clef de sa malle.
Puis-je vous offrir une tasse de thé?
Le chat a bu tout le lait.
Nous avons donné du pain au mendiant.

UN HÉROS

Un soldat blessé se trouvait à l'ambulance lorsque, tout à coup, il entendit sonner la charge. Il se précipita hors de la voiture.

"Où vas-tu?" lui cria un camarade.
"Au front!" répondit le soldat.
"Mais tu es blessé mortellement!"
"J'aime mieux mourir sur le champ de bataille qu'à l'ambulance," répartit le héros.
Et il disparut.



MARTIN CRUSOE

A BOY'S ADVENTURE ON WIZARD ISLAND

Told by T. C. Bridges, the popular story-writer

What Has Happened

A brief synopsis of what has happened appeared in last week's issue.

CHAPTER 31

The Signal is Given

"You will strip to the skin, bathe yourself in the fluid in this bath, then wait until you are dry and dress yourself in these garments," said Hymer to Martin. "When you are dressed, and just before the door opens, you will step upon this stone which you see is covered with a grey powder. Rub your feet thoroughly in the powder, so that the soles are completely covered with it. Then come forth, and follow the path."

"Be not afraid," he added gravely.

Before Martin could say a word, he had passed out through a door at the back of the room of preparation, and Martin was left alone.

To say that Martin was happy or comfortable would be stretching the truth dangerously. His heart was thumping, and he had a nasty sinking feeling at the pit of the stomach.

Little wonder, for the small dressing-room in which he stood was filled with the deep droning of the fire fountain, and the solid ground beneath him vibrated under its rushing tide of fire.

Around the flame spout—Akon had shown it to him on the previous evening—at a distance of no more than ten or a dozen yards, ran a raised pathway of stone; and the nature of the ordeal was that he had to tread this path, making a complete circle of the fire.

How such a thing was possible, how he could accomplish such a feat and live, was beyond Martin's understanding. Talk of a burning, fiery furnace—why, the heat at such close range would scorch the very flesh from his bones.

Yes, he was badly scared, yet, with the inborn pluck which was his, he had no thought of trying to escape the ordeal. To attempt it was the only way of saving Akon and his father from the fury of Odan. If he failed, well, then, he was dead, but at any rate he would have died with the feeling that he had done his duty; if by any miracle he succeeded, then the whole case was changed. The half-savage Lemurians would turn upon Odan, and the revolution would be at an end.

These were the thoughts that passed through his mind as he proceeded to follow out the chief priest's instructions. He stripped off his drill jacket and breeches, his boots and puttees, and all his English clothes. As he laid them over the back of a bench he wondered grimly if he would ever wear them again. Then he got into the great stone bath filled with clear, cool water which had a curious silky feel, and a peculiar but not unpleasant odour. When he got out his skin prickled slightly and had a strangely soft feel. It was no hardship to wait until he was dry, for the place was almost uncomfortably warm.

The clothes which Hymer had left him were of a white material, resembling wool, but very thick and heavy. The outer garment was like a dressing-gown, belted at the waist, and coming down to his ankles. There was a turban-like head-dress. Examining the stuff, Martin made up his mind that it was probably made of asbestos fibre, and therefore fireproof. It was quite clear that the priest was doing his best for him; yet, even so, Martin

felt that no precautions could save him from the effects of that terrific, furnace-like heat.

He had just got into the dress when the inner door opened and Prince Akon entered. His forehead was knitted, and his brilliant blue eyes were full of anxiety.

Striding forward, he took Martin by both hands.

"My friend," he said sharply, "you must not do this thing. Take your pistol, and I will take my sword. With our men who are still faithful, we will fall upon Odan and slay him."

Martin looked up and smiled. Then he shook his head.

"Akon, you are one of the best," he said, "but you know as well as I do that it won't work. Odan's taking jolly good care that we don't try any little surprise of that sort. It would only mean that the whole lot of us, including your father, would be wiped out. No; I'm trusting Hymer, and I'm going through with it."

Akon paused. He seemed to have some difficulty in speaking.

"You are very brave," he said at last. "And as I see that your mind is made up, I will not argue more. But this I promise—if harm comes to you, I myself will settle your debt. I will kill Odan."

"You'd much better sit tight and look after your father," returned Martin. "Once I am out of the way, Odan won't have any further cause for complaint. But, talking of debts, I want you to settle one or two of mine if you can possibly manage it—I mean, in case I am not able to do it myself. Will you?"

"Tell me," replied Akon simply.

"In the first place," said Martin, "I want you to get news to the Professor, and if possible send my flying-boat back to him."

"It shall be done," said Akon, "if I am alive to do it."

Martin laughed.

"You can't do it if you're dead. That's a sure thing. And now for the other business. You seem to have lots of gold here?"

"Next to tin and copper, it is our most plentiful metal," agreed Akon. "But of what use is gold to you?"

"None to me, personally. But it's worth a lot in my country. We use it for money, as I have told you before. Can you spare some?"

"A hundred men's load, if you so desire."

"Bless you, two or three will be enough. Now see here. My father died owing money. It was not his fault, but I want to pay it and so clear his memory. Now, on this paper I have written down the name of the man who will pay these debts for me. He is our man of law in England. Give the gold and this paper to the Professor; and I know that he will manage the business for me if he ever gets back home again."

"It shall be done," repeated Akon; and as he spoke the deep thunder of a metal gong rose above the shrill whistle of the fire fountain. He started up.

"That is the signal!" he exclaimed. "The door is about to open."

"Then I must rub my feet in this powder," said Martin quickly; and, springing on the stone, he proceeded to do so.

Next moment the outer door, worked by invisible levers, swung slowly open.

CHAPTER 32

The Ordeal by Fire

One last grip of Akon's hand, then Martin stepped out into the arena. A path, white and smooth like the one which circled the gas geyser, led straight from the door. For a moment Martin paused and glanced around him.

Now he became aware that there were no fewer than three separate galleries surrounding the immense circle, and that each of these was packed almost to suffocation. There were many thousands of people both brown skinned and white, but the brown men were much more numerous. And all these thousands of pairs of eyes were centred upon the English boy who stood alone, robed in white, on the pathway beneath them.

Not a sound did they make. The hush was broken only by the steady blast of the gas fountain in the centre. Seen from below, this spout of fire was even more terrible and impressive than as Martin had first seen it from above. The shaft from which it rose seemed to be about two feet across; and close to the ground the pressure was so great that the flame was invisible. It appeared first at about a man's height from the ground, and here it was blue and almost transparent. Higher up it broadened and turned yellow, and from that white, until, near its towering summit, it was a great umbrella-like shape of incandescent gas.

As it happened the day was overcast, a rare thing in that part of the world, and against the canopy of dull cloud overhead the flame gleamed with intolerable brilliance, throwing up into strongest relief all those thousands of strained faces that lined the tiers of galleries.

Two faces in all that crowd Martin glimpsed as he looked swiftly round. One was the King's, grave yet splendid under its thick thatch of silver hair; the other Odan's. The King sat upon a raised seat on the north side of the highest gallery; Odan in a great chair, exactly opposite. And Odan's fierce eyes gleamed with a savage delight which filled Martin with sudden remorse that he had not taken his chance on the previous day, and killed the evil beast.

All this he took in within a few seconds. Then, with head erect, he walked steadily along the path.

At every step the heat increased. Before he was half-way across the space separating him from the fire fountain it had become almost intolerable. It was upon his face that he felt the worst of it. The clothes with which Hymer had provided him were clearly made of a non-conducting substance. They protected his body completely. With a quick movement he pulled his headress more closely over his face, and moved on.

Now he was within thirty paces of the flame, and it took every ounce of will-power and resolution he possessed to keep going. If it were like this now, what would it be by the time he reached the path

itself? Could flesh and blood carry him so far?

His head spun, his pace slackened in spite of himself. All that he was conscious of was the hideous roaring of the flame and the intolerable heat which beat upon him. He was in such torture that the mad idea came upon him to rush forward, hurl himself into the flame itself, and so end his pain.

Five steps more, and his senses were rapidly leaving him. Then—was he dreaming or was it really true?—the mighty pillar of flame seemed to flicker like a candle in a draught. The deep-toned whistle was cut short, and before his astonished eyes the whole thing went out like a blown candle.

For an instant Martin was unable to trust his senses. He stood perfectly still. Then like a flash it came to him that this might be only a temporary respite, and that if he did not hurry the flame might burst out again.

On he went, reached the white circle, and with long but steady strides marched round it. Though the stone was almost red-hot beneath him he hardly noticed it. In some strange way the powder saved his skin from burning. He completed the circle, turned deliberately, and marched back towards the edge of the arena amid a silence that was like death. Hardly was he half-way back before, with a screech like a hundred steam whistles, the pent-up gas broke loose again, and the flame went soaring to the skies.

But loud as its roar, it was nothing to the thunder of shouting which burst from ten thousand throats, and sent echoes crashing to and fro across the vast arena.

Martin paid no attention. Now that the strain was over, he began to feel how terrible it had been. He was sick and giddy, and his one idea was to reach the dressing-room before he collapsed.

As he got to the door he felt himself staggering, but before he fell Akon's strong arms seized him, and the splendid young Norseman set him gently in a chair and put a cup to his lips.

What it contained Martin did not know, but it was exquisitely cool and fresh, and must have been a strong tonic into the bargain, for he felt new life flowing in his veins. "Is—is it all right?" he panted out.

"You did splendidly," Akon told him. "Even the flame could not destroy one so brave as you."

"Nonsense!" said Martin pettishly. "Who was it that turned the tap off just at the right moment?"

Akon gazed at him blankly; and it came to Martin, with a strange shock, that the prince actually believed a miracle had happened.

He changed the subject quickly. "Now I hope they'll let me go home," he said.

Akon looked at him gravely. "I fear not," he answered. "Listen to them shouting! They are crying for you to be their leader in place of Odan."

TO BE CONTINUED

Five-Minute Story

THE HAVEN

Years ago there was a farmer's wife living on Dartmoor, but she found no joy in that sweet heathery land, for the great prison of Dartmoor overshadowed her thoughts as well as her home.

She fretted her heart away for the prisoners, and whenever the guns went off, telling the folk a prisoner had escaped, she cried:

"Thank God! for prison isn't the way to turn their hearts, poor creatures!"

But when she was pitiful her husband became angry, saying:

"You'll be hiding them next! And look you here, my lass, if you do, you'll be finding yourself up yonder in the prison too; and mine won't be the hand to save you—I'm not one to want to see thieves and the like wandering over Dartmoor."

Then his wife would be wisely silent; but her heart was sore for the poor fugitive, and though she was a timid woman she made very brave plans.

Every night—when news was abroad that a prisoner had escaped—she waited patiently until the little maid had climbed the stairs to her bed in the attic, and the farmer had smoked his last pipe. Then, when he, too, had disappeared up the wooden stairs, to sleep like a log until the old cuckoo clock struck five the next morning, she made her preparations.

First, she made up the fire and set a pan of broth to simmer on the hob. Then, moving softly, she drew up a chair and laid across it a complete set of her husband's old clothes. Ah! the farmer would never have snored so peacefully if he had known!

She put boots and socks, too, and an old slouch hat, and bread and meat in the overcoat pocket, and on it all she pinned a little note saying, "You're welcome to everything, poor soul." Then she unlatched the window and set a tiny light in it, locked the kitchen-door firmly from the outside, and crept up to bed.

It was a wild, daring thing to do; but it was the only way this kind-hearted woman could go to her warm bed with a clear conscience.

She was always down first in the morning, and twice, during all the years she prepared for some unknown fugitive, she found her little offerings gone, and each time a tiny hurried note expressed eternal gratitude to her.

"Well, any way, you were a kind, good creature," said one to whom the farmer's wife confessed her daring deed, when years had passed by and she was an old, old lady.

"Ah, my dear, but I was a stingy one!" cried the old woman. "And many a wakeful night it's given me to think that not once in all those years did I ever have the thought to put as much as a penny-piece in the poor creatures' pockets!"

NEWSPAPER NOTES AND QUERIES

What are Excess Profits? If during the war a business made more profit than before the war, a percentage of the increase in profits (80 per cent.) was paid to the Government as a war-tax. The percentage is now reduced to 40.

What is Extradition? Extradition is the surrender of someone who has fled from another country after breaking its laws, and is given back for punishment by the country in which he took refuge. The offences for which extradition will be allowed are agreed upon between countries. It does not follow that the crime of one country

will be considered crime in another country. For example, political offences are not classed as crimes in England, and fugitive politicians are not given up unless violence is proved against them.

What are Hereditary Titles? Hereditary titles are such as descend to a succession of heirs, and so are kept alive until the line of heirs dies out. They are different in this from the titles held by knights, law lords, and bishops, which cease with the death of the first holder, and from titles restricted by patent to one or two lives.

The Children's Newspaper grows out of My Magazine, the monthly the whole world loves. My Magazine grew out of the Children's Encyclopedia, the greatest book for children in the world. The Magazine appears on the 15th of each month, and the Editor's address is: Arthur Mee, Fleetway House, Farringdon St., London, E.C. 4.

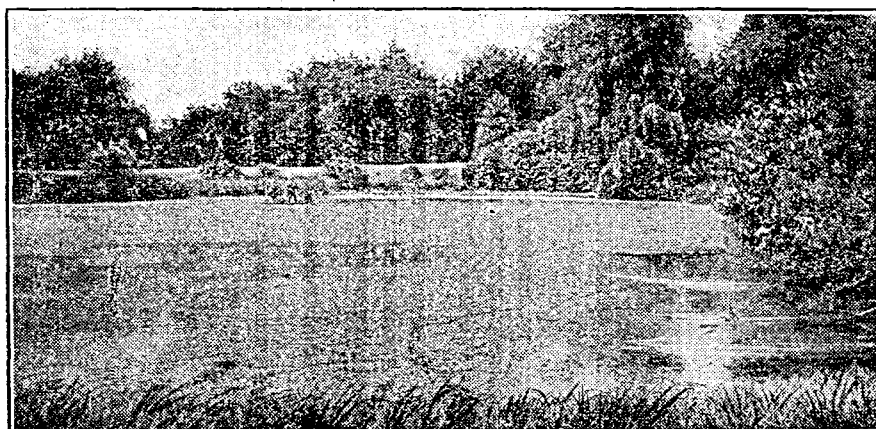
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GREAT OIL DISCOVERY. JAVA VOLCANOES. ENEMY IN BATTERSEA PARK



Lord Cowdray, whose faith in the oil well has been splendidly justified



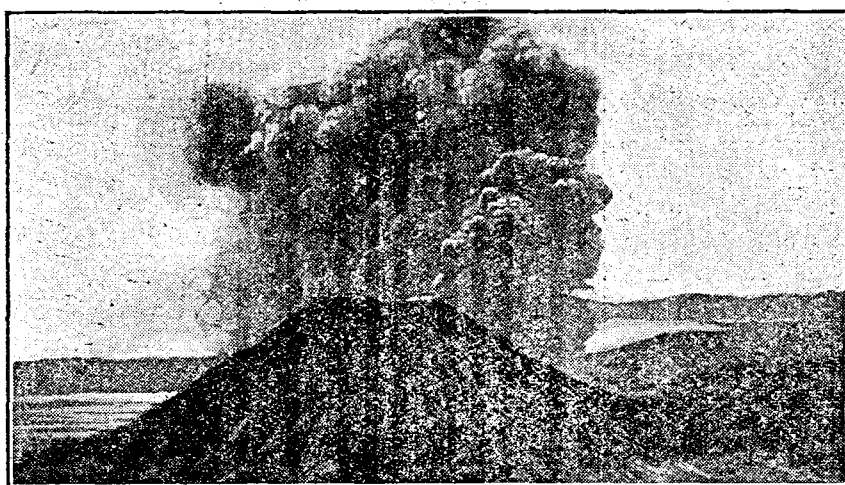
The pond choked by weeds in Battersea Park



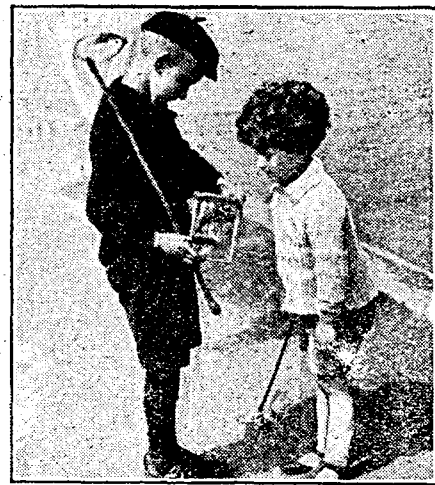
The first volunteer for the flight to Australia—Lieutenant Hinkler



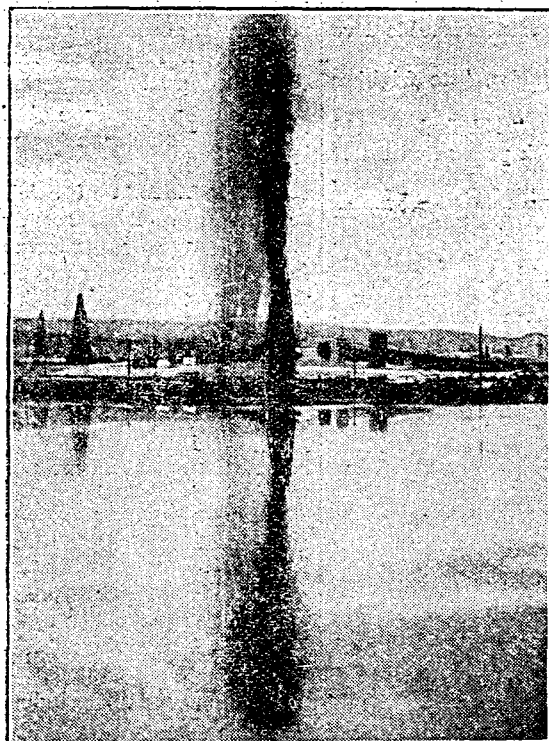
A policeman takes Hawker in charge—How he escaped the crowd



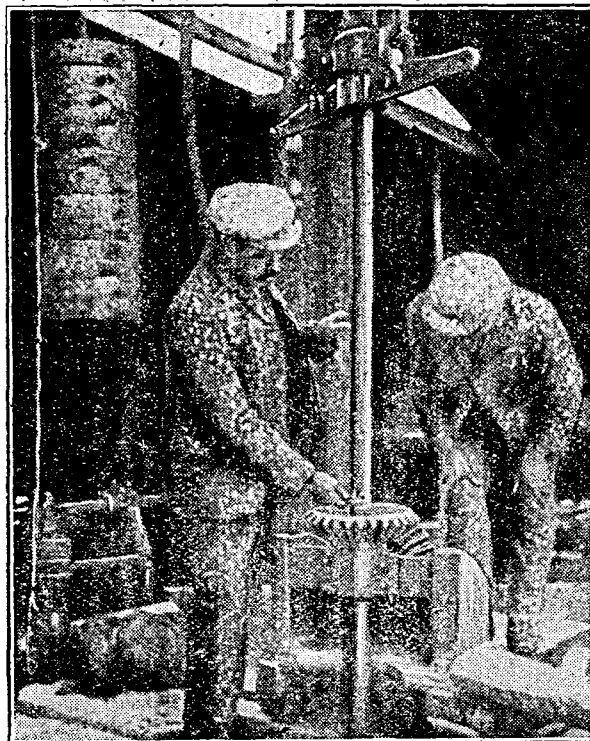
A volcano in Java, where thousands have been killed after an eruption



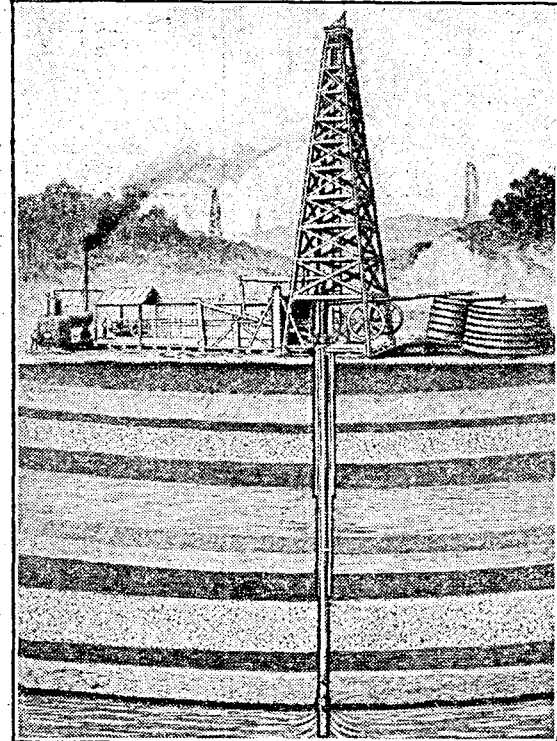
A good catch A snapshot in Kensington Gardens



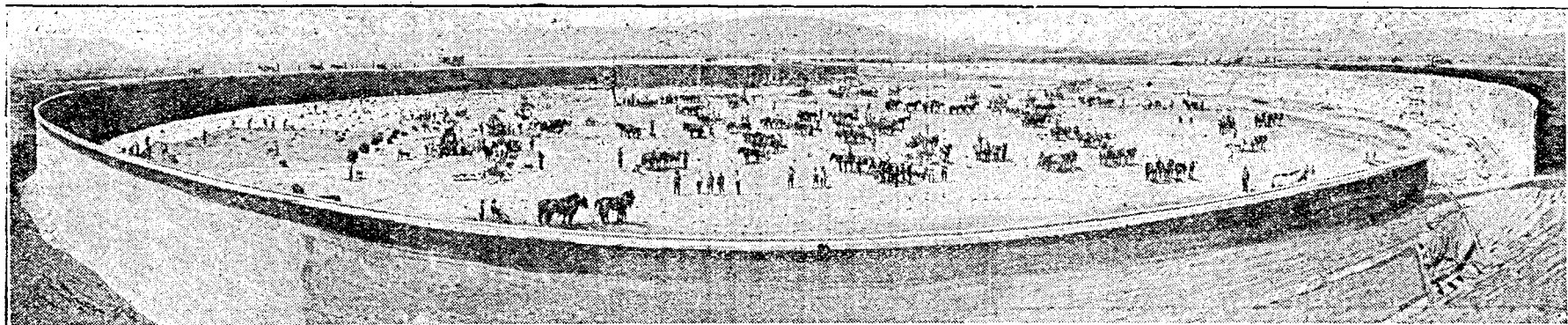
Oil spouting from a well at the rate of over 40,000 barrels per day in California



Boring for oil on a winter's day in Derbyshire The boring is now over 3000 feet deep



Pumping up oil through an iron pipe which may be half a mile deep



Building one of the most remarkable reservoirs in the world—An enormous concrete tank which holds a million barrels of oil, now in use in California

THE DISCOVERY OF OIL IN ENGLAND AFTER MANY MONTHS' DRILLING BY LORD COWDRAY AND HIS EXPERTS—HOW OIL COMES OUT OF THE EARTH

The Children's Newspaper is printed and published every Friday by the proprietors, the Amalgamated Press, Limited, The Fleetway House, Farringdon Street, London, E.C. 4. It is registered as a newspaper and for transmission by Canadian Magazine Post. It can be ordered from these agents: Canada, Imperial News Company; Australasia, Gordon & Gotch; South Africa, Central News Agency; India, A. H. Wheeler & Co.